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Mills Seek To Stabilize Market

Large Producers Meet Competition but Exert Efforts Against Lower Prices—Sentiment Slightly Better—Building Steel Awards Heaviest in Months—Chesapeake & Ohio Places Large Car Orders—Production Is Further Curtailed

STABILIZATION of steel prices at a new lower basis where they were carried by the recent weakening of the market is making progress. Various important producers are modifying their quotations to conform to the competitive levels but are beginning to stand against further concessions basing their policy on the tonnage in hand and the evidence of sound, underlying conditions which apparently have not been materially altered despite the recent lapse of buying confidence. Leading producers also are resisting any writing down of tonnage now on mill books though this is much less of a problem than is usually encountered in a lowered market because future orders have been so limited.

A market more nearly in balance is reflected by IRON TRADE REVIEW composite of fourteen leading iron and steel products which stands at $42.47 against $42.55 last week and $43.13 three weeks ago.

While fresh tonnage on the whole has tapered off and buyers are holding back until prices settle, new requirements closed this week have been strikingly large in those fields which for months have been the main support of the market, building work and the railroads.

Big Awards Many

The new awards in structural steel were the heaviest in months totaling 58,572 tons covering about 40 different projects. Chief as to size were the 16,300 tons for the Palmer House, Chicago, 8000 tons for a Kearny, N. J., power plant, 5700 tons for Baltimore & Ohio bridge work, 5050 tons for schools in New York, and 4000 tons for dock work at San Pedro, Cal. The Stevens hotel, Chicago, 15,000 tons, is practically closed. Ford assembly plants offered at Chicago and Dallas will require 10,000 tons. March structural awards for the country are officially reported at 184,600 tons or 71 per cent of shop capacity.

Another heavy week in railroad buying is featured by the placing of 7120 cars, including 5000 hopper and 2000 automobile cars, and 100 locomotives by the Chesapeake & Ohio railroad. From 75,000 to 100,000 tons of steel is involved. The Missouri Pacific closed on 1000 cars and 1200 car repairs. Reports are current that the Baltimore & Ohio may be a large purchaser of equipment. The Southern Pacific rail order for 131,245 tons has been distributed. Reflecting the recent equipment purchases, orders for steel castings in March were 97,962 tons, the largest in a year.

Output Is Lower

Mill and furnace operations have shown further slow shrinkage. The whole industry is averaging about 86 per cent active with the Steel corporation at 92 to 93 per cent and the independents at 78 per cent of capacity. The Carnegie Steel Co. has blown out four blast furnaces. Five furnaces have gone out in the East and four more are slated to follow. More coke ovens are idle in the Connellsville region with wage cuts foreshadowed.

Unfavorable impressions created by the recent slowing down of automobile production are less pronounced now that spring buying is under way. A check by steel companies shows that only 50 per cent of Detroit plants have been forced to curtail their output recently. Most of these builders with running contracts for castings have been ordering deliveries deferred rather than requesting the customary cancellations when business has undergone a sharp slump.

Some steel prices have gone lower this week but this is not general. Black sheets have been sold at 3.60c, Pittsburgh. Sheet bars have been offered at $41. Cement-coated nails are down $2 and large machine bolts 10 points. Warehouse prices are no lower.

Ore Sales Backward

The Lake Superior ore market is the quietest in years following the opening. Open market sales probably have not exceeded 500,000 tons to date and inquiries are few as buyers are backward in estimating their future requirements. However, some leading ore interests express confidence their sales for the year finally will equal 1923.

Removal of some of the merchant capacity has given the eastern pig iron conditions a better tone but generally the market remains one where negligible buying is entirely out of line with liberal shipments.

The Dawes report has had a favorable effect sentimentally on industrial business in Europe, says IRON TRADE REVIEW staff cable though it is believed the settlement of the reparations problem is still distant.

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Quoting World Prices for First Time

THIS issue marks the inauguration of two new features in European price quotations published every week in Iron Trade Review. Hereafter the quotations will include export prices on all the principal commodities from every important European country arranged in parallel columns for comparison. Quotations also will be published regularly giving the price of European iron and steel delivered to important ports throughout the world.

No business paper heretofore has attempted the publication of delivered prices throughout the entire world. This new feature, destined to be of great importance to American commercial interests has been made possible by the complete foreign organization of Iron Trade Review.

In addition to delivered prices covering Asia, Africa, South America, and Australia, quotations are given for European steel delivered c.i.f. to United States Atlantic and Pacific ports. These latter prices are of great interest at present owing to the importation of considerable amounts of foreign iron and steel on both coasts. The method of presenting European prices has been changed so that more complete and detailed information is given than has ever before been attempted by a modern business publication.

Do You Know That—

2736 subscribers to IRON TRADE REVIEW are identified with the manufacture of commercial forgings.

Pig Iron Buying Still Deferred and Prices Continue To Weaken —More Furnaces Are Going Out

PITTSBURGH, April 15.—Devoid of inquiries and sales the pig iron market is stagnant. Each of several sellers reports one to five single carload sales in the past week, mostly foundry grades. All are hopeful a buying movement will start before the present month elapses. No. 2 iron is bringing $22.50, and $23, valley or Johnstown. No. 2 plain is available from brokers at $21 and $21.25, valley. The last sale of the No. 2 grade above a single carload involved 300 tons. This sale was made to the National Roll & Foundry Co. at $21.25, valley. Warm blast southern charcoal iron now is quoted $28 to $30, furnace. An agent reports small sales here. The Bethlehem Steel Co. is selling small lots of spot Mayari iron at $30, furnace. Resale basic iron is available at $21. It is quoted at $21.75 to $22, valley, with no sales. Bessemer iron is selling in occasional carloads at $23, valley.

Demand Further Declines

Boston, April 15.—Demand for pig iron in New England has fallen off still more during the past week. A stove manufacturer took 100 tons of No. 2X (2.75 to 2.75 silicon) at $22 eastern Pennsylvania or $25.65 delivered. A New Hampshire consumer bought 300 tons and while the price is not stated a bid of $21, Buffalo, covering three grades of iron, is known to have been too high. Eastern Pennsylvania furnaces still are anxious for tonnage, but in the absence of sales it is difficult to name the minimum. At present a base price of $21.50, eastern Pennsylvania, seems to be the best indication of the market. This means $25.15, delivered. A Vermont consumer was quoted $25.39 on No. 2X for delivery from a nearby furnace.

Eastern Production Curtailed

New York, April 15.—Sales of pig iron in this territory during the past week aggregate at least 3500 tons. Current inquiries pending involve 7500 to 10,000 tons. The price situation seems to be firmer. Unsuccessful efforts have been made to buy Buffalo iron under $21. The market on Buffalo foundry may be quoted at $21 to $21.50, furnace. On eastern foundry iron the market continues $22 to $22.50, furnace, although anything under $22.50 is exceptional. Production has been curtailed. The Temple, Pa., furnace went out of blast last Thursday. The Punxatawney, Pa., furnace is slated to go out for repairs in a month. The Replogle furnace in New Jersey probably will be blown out in two weeks for repairs. The Musconetcong furnace recently was put out of blast by the Singer Mfg. Co., which now is a buyer of foundry iron.

Inquiries at Buffalo For 6000 Tons

Buffalo, April 15.—Current inquiries for pig iron total about 6000 tons, including one lot of 2000 tons for a melter in this district. A Connecticut melter seeks 1000 tons and a consumer in New York state wants 500 tons. The Worthington Pump & Machine Corp. is believed to have placed the 1750 tons it wanted for its Harrison, N. J., plant and the New York Air Brake Co.'s inquiry for 1500 tons is believed to have been placed. Makers are seeking to enter small lots at $22 for No. 2 plain (1.75 to 2.25 silicon) but competition forced this price down to $21 to $21.50 in many instances. Total sales for the week are believed to have been 3000 to 4000 tons.

Prices Continue To Soften

Cleceland, April 15.—Pig iron prices continue to ease off, while extreme dullness prevails in the market. Cleveland producers are meeting competition from the valley and Buffalo, and in some instances have gone below the figures at which iron may be brought in from those points. The Buffalo minimum is $21, which with a freight rate of $2.65 brings the price delivered in Cleveland to $23.65. Valley iron is obtainable at $22, taking a freight rate of $1.76 to Cleveland. It is reported that valley iron has been offered at $21.50, which with freight cost added would bring the delivered price here to $23.26. Cleveland makers, however, have not had to go below $23.50, delivered, to get business, and it is doubtful if $21.50, valley, has been done in this territory. The prices which local sellers have been compelled to meet recently represent a reduction of 50 cents to $1 from their quotation of $24, furnace, several weeks ago. The lake furnace price outside Cleveland this week has been reduced another 50 cents to $22.50, representing a decline of $1 in the last two weeks. The largest merchant producer with headquarters here sold several thousand tons of pig iron covering its activities of last week. Another's sales amounted to 1000 tons. All sales reported are in carload and 100 to 200-ton lots, with the exception of 500 tons for an Indiana melter. Inquiries for small tonnages for prompt delivery have increased. Contract shipments are good. Sellers say the reduction in the iron ore prices has been discounted. One furnace operator says 25 per cent of his buyers have not closed for their second quarter requirements. An inquiry for 500 tons of basic iron was made by a middle interest here this week, but no sale developed. The valley price was quoted as $22.

Chicago Market Quiet

Chicago, April 15.—Northern malleable and foundry iron prices are weak, with the quotation of $24, furnace, quite general. Sales are made occasionally at $24.50. Practically no inquiry is current. Melters are using up their stocks and delaying buying. The melt of iron has not decreased decisively. nor are shipments down, although occasionally the holding up of contract iron is requested. The price reduction is due more to a general weak tone in the iron and steel markets than to competition, because little inquiry is out. A South Bend, Ind., melter purchased 500 tons of foundry iron. Birmingham iron still is available at $22, Birmingham. A Sheffield maker still is willing to meet competition with barge iron, but sales are light. A Michigan melter is inquiring for several hundred tons of silveries. Charcoal iron is holding to $26, furnace, with sales limited to carlots.

Production Exceeds Shipments

Cincinnati, O., April 15.—Aside from the sale of 800 tons of northern iron to the Niles Tool Works, Hamilton, O., carlot buying was the main feature of the pig iron market during the past week. The Niles order, which went to a furnace interest at Ironton, O., at $23 for the base grade, calls for shipment this month and in May. The Worthington Pump & Machinery Corp., is reported to have bought 100 tons of northern foundry iron, a car of bessemer and 50 tons of charcoal iron for its Elmwood, O., plant. A half dozen inquiries

ore before the trade involving a carload to 100 tons. The Baltimore & Ohio railroad wants 100 tons of northern iron for its Newark, O., plant. Quotations on northern iron range from $23 to $23.50, Ironton, while southern iron is quoted at $22 to $23, Birmingham. The $22 quotation applies to the product of Tennessee furnaces. Production in the southern Ohio district exceeds shipments for the first time this year. The Marting Iron & Steel Co. probably will blow out its Ironton stack before the end of the month. The Belfont Iron & Steel Co. has announced that its Sarah furnace will be blown in shortly to use up approximately 30,000 tons of iron ore on its yard at Ironton, O. Bessemer iron will be produced for the nail and wire mill of the company.

Sales Almost Have Vanished

St. Louis, April 15.—Sales and inquiry in the pig iron market have dwindled almost to the vanishing point. Business during the last few days was the quietest in more than 18 months. With few exceptions sales are confined to carlots for prompt shipments. The largest sale involved 500 tons of foundry iron for a melter in this district. Blast furnace interests are anxious to obtain tonnages, but the attitude of melters is to hold off. Stove builders complain of a lack of orders. All of them report that advance business booked is the smallest for this season in years. Prices are weak and indefinite. Southern iron is quoted at $22 and $23. Iron shipped by rail and river can be had at a price figuring below $22, Birmingham. Chicago iron ranges from $23 to $24. The leading St. Louis producer's price is unchanged at $24.50 to $25 f.o.b. Granite City. The St. Louis Coke & Iron Co. is blowing out its Granite City furnace for repairs. It is operating the stack of the Mississippi Valley Iron Co. on basic production.

Southern Iron Market Dull

Birmingham, Ala., April 14.—Orders for 100 tons of pig iron are considered good at this time but are not numerous. Sales are far below production but there is a steady reduction of surplus stock due to active shipments. Furnace interests still owe consumers a considerable tonnage of iron. Most business being received now is for spot shipment. The melt in the home territory is brisk and this promises not only to continue but to show improvement. Production is holding up to about the same level as it has been for several months. Quotations are being held at $22.50 to $23, No. 2 foundry, the lower price applying where there is some freight disadvantage.

Many Furnaces Going Out

Philadelphia, April 15.—A much more cheerful feeling is present among eastern pig iron producers because of the blowing out of furnaces and the indications of further curtailment. The Temple, Pa., furnace was blown out April 10. The Eastern Steel Co. blew out one furnace last week and the Bethlehem Steel Co. is reported to have blown out three stacks, one at South Bethlehem, one at Sparrows Point and one at Steelton. Furnaces slated to go into idleness the next two and four weeks include Replogle, Punxsutawney, Colonial and Hokendauqua stacks. This promises to represent a considerable reduction in the supply of iron. While a fair inquiry is coming from New York and New England consumers, demand in this territory is featureless except for one inquiry for 1000 tons of special basic. The demand for car loads and small lots, however, is better. The market on foundry iron continues at $22 to $22.50, base furnace. Business closed includes scattered sales of copper-bearing low phosphorus iron at $27, furnace, to nearby points.

Prices Present and Past

Representative market figures yesterday, and for last month, three months ago and one year ago

	Apr. 16, 1924	Mar., 1924	Jan., 1924	Apr., 1923
PIG IRON				
Bessemer, valley del., Pitts....	$24.76	24.86	24.66	32.77
Basic, valley	21.75	22.00	21.40	31.00
Basic, eastern del., eastern Pa....	21.50	22.00	22.50	30.75
*No. 2 foundry, del. Pitts....	23.26	24.26	24.16	32.77
*No. 2 foundry, Chicago	24.00	24.50	23.70	32.50
*Southern No. 2, Birmingham....	22.00	23.00	21.60	27.00
*Southern Ohio, No. 2, Ironton.	23.00	23.50	22.90	31.00
**No. 2X, Virginia furnace	25.50	26.00	25.00	29.25
**No. 2X, eastern del., Phila..	23.63	24.13	24.26	32.00
Malleable, valley	22.25	22.50	22.00	31.00
Malleable, Chicago	24.00	24.50	23.70	32.50
Lake Superior charcoal, Chicago	29.04	29.04	29.04	36.55
Gray forge, val., del. Pittsburgh	23.26	24.26	23.56	31.77
Ferromanganese, del., Pitts.	112.29	112.29	113.79	124.79
SEMIFINISHED MATERIAL				
Sheet bars, bessemer, Pittsburgh,	42.50	42.50	42.50	45.85
Sheet bars, open-hearth, Pitts....	42.50	42.50	42.50	45.85
Billets, bessemer, Pittsburgh.....	40.00	40.00	40.00	46.00
Billets, open-hearth, Pittsburgh..	40.00	40.00	40.00	46.00
FINISHED MATERIAL				
Steel bars, Pittsburgh.....	2.30	2.40	2.40	2.35
Steel bars, Chicago	2.40	2.50	2.50	2.43
Steel bars, Philadelphia.....	2.57	2.67	2.72	2.825

*1.75 to 2.25 silicon **2.25 to 2.75 silicon.

	Apr. 16, 1924	Mar., 1924	Jan., 1923	Apr., 1923
FINISHED MATERIAL (Continued)				
Iron bars, Philadelphia	$2.47	2.57	2.57	2.845
Iron bars, Chicago mills	2.35	2.40	2.40	2.60
Beams, Pittsburgh	2.30	2.50	2.50	2.45
Beams, Philadelphia	2.57	2.62	2.72	2.845
Beams, Chicago	2.50	2.60	2.60	2.53
Tank plates, Pittsburgh.....	2.30	2.40	2.50	2.45
Tank plates, Philadelphia	2.52	2.57	2.72	2.945
Tank plates, Chicago	2.50	2.60	2.60	2.53
Sheets, blk., No. 28, Pittsburgh.	3.75	3.75	3.75	3.85
Sheets, blue anl., No. 10, Pitts.	2.85	2.95	2.95	3.15
Sheets, galv., No. 28, Pittsburgh	4.90	4.90	4.95	5.00
Wire nails, Pittsburgh	3.00	3.00	3.00	3.00
COKE				
Connellsville furnace.....	3.60	4.05	3.80	6.25
Connellsville foundry, ovens	4.50	4.85	4.35	7.80
OLD MATERIAL				
Heavy melting steel, Pittsburgh	16.00	19.75	21.10	25.85
Heavy melting steel, eastern Pa.	15.50	17.00	18.15	23.50
Heavy melting steel, Chicago...	14.50	16.70	17.40	22.40
No. 1 wrought, eastern Pa.....	18.50	19.00	20.10	27.00
No. 1 wrought, Chicago	15.00	16.05	17.50	22.75
Rails for rolling, Chicago.....	17.25	19.30	18.90	23.65

Composite Market Average

Representing the Combined Average Prices Per Ton of Fourteen Leading Iron and Steel Products Yesterday, One Week, One Month, Three Months, One Year and Ten Years Ago.

Apr. 16, 1924	Apr. 9, 1924	Mar., 1924	Jan., 1924	Apr., 1923	Apr., 1914
$42.47	$42.55	$43.24	$43.26	$47.01	$23.39

Products Included Are Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural Shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe

Competition Being Met

New York, April 15.—Steel prices have not been officially reduced by the Steel corporation but competition on a lower basis is being met according to Chairman Gary.

Commenting today on rumors of impending reductions in steel prices, Judge Gary said:

"There has been no official statement as to reduction of prices and our general schedule is practically unchanged. However, to meet competition, in some instances prices have been slightly reduced, depending somewhat upon the quantities."

Iron and Steel Prices

SCRAP PRICES, PAGE 1074; WAREHOUSE, PAGE 1066; ORE NUTS, BOLTS AND RIVETS AND PIPE PRICES, PAGE 1070

Pig Iron

Prices per gross ton

Bessemer, valley	$23.00
Bessemer, Pittsburgh	24.76
Basic, valley	21.75 to 22.00
Basic, Pittsburgh	23.51 to 23.76
Basic, Buffalo	21.00 to 21.50
Basic, del., eastern Pa.	21.50 to 22.00
Malleable, valley	22.25 to 22.50
Malleable, Pittsburgh	24.01 to 24.26
Malleable, Chicago	24.50
Malleable, Buffalo	21.00 to 21.50
Malleable, del., eastern Pa.	24.00 to 24.50

FOUNDRY IRON SILICONS

No. 2 Northern	1.75 to 2.25
No. 2 Southern foundry	1.75 to 2.25
No. 2X East'n and Virginia	2.25 to 2.75
No. 1X Eastern	2.75 to 3.25
No. 1 Chicago	2.25 to 2.75
No. 2 foundry Eastern	1.75 to 2.25

No. 1X, eastern del., Phila.	24.13 to 24.76
No. 1X, Buffalo	22.00 to 22.50
No. 2 foundry, valley	21.50 to 22.00
No. 2 foundry, Pittsburgh	23.26 to 23.76
No. 2 foundry, Buffalo	21.00 to 21.50
No. 2 foundry, Chicago	24.50
No. 2 foundry, Granite City	24.50 to 25.00
No. 2 foundry, Ironton fur.	23.00 to 23.50
No. 2 foundry, Cleveland, del.	24.00 to 24.50
No. 2 foundry, del., Phila.	23.13 to 23.76
No. 2 foundry, N. J. tidewater	23.63
No. 2X, eastern del., Phila.	23.63 to 24.26
No. 2X, east, N. J. tidewater	24.13
No. 2X, eastern del., Boston	25.65 to 26.65
No. 2X foundry, Buffalo fur.	21.50 to 22.00
No. 2X, Buffalo, del. Boston	26.91 to 27.91
No. 2 southern, Birmingham	22.00 to 23.00
No. 2 southern, Cincinnati	26.05 to 27.05
No. 2 southern, Philadelphia	30.30 to 31.30
No. 2 southern, Chicago	28.01 to 29.01
No. 2 southern, Cleveland	28.01 to 29.01
No. 2 southern, Boston (rail and water)	28.91 to 29.91
No. 2 southern, St. Louis	27.17 to 28.17
No. 2X, Virginia furnace	25.50 to 26.50
No. 2X, Virginia, Phila.	30.17 to 31.17
No. 2X, Virginia, Jersey City	31.04 to 32.04
No. 2X, Virginia, Boston	31.41 to 32.41
Gray forge, eastern Pa.	22.00 to 22.50
Gray forge, val. del., Pitts.	23.26 to 23.76
Low phos., standard, valley	29.00
Low phos., standard, Phila.	nominal
Low phos., Lebanon, furnace	27.00
†Low phos., English, Phila.	26.76 to 27.26
Charcoal, Birmingham	33.00 to 33.50
Charcoal, Superior, Chicago	29.04

Silvery Iron

Jackson County, Ohio, furnace

7 to 8 per cent	31.00
8 to 9 per cent	32.50
9 to 10 per cent	34.50
10 to 11 per cent	36.50
11 to 12 per cent	39.00
12 per cent	41.50

Bessemer Ferrosilicon

Jackson County, Ohio, furnace

10 to 11 per cent	41.50
11 to 12 per cent	44.00
12 to 13 per cent	46.50

Ferroalloys

†Ferromanganese 78 to 82 per cent, tidewater, or furnace first hand and resale	107.50
Ferromanganese, delivered, Pittsburgh	112.29
Spiegeleisen 19 to 21 per cent domestic furnace or tidewater	35.00 to 38.00
†Spiegeleisen, English, delivered tidewater	35.00 to 38.00
Ferrosilicon, 50 per cent contract freight allowed	75.00
Ferrotungsten standard, cents per pound contained	88.00 to 93.00
Ferrochrome, 60 to 70 chromium, 6 to 8 carbon, cents per pound contained, delivered	10.00 to 10.25
Ferrovanadium, 30 to 40 per cent per pound estimated, according to analysis	$3.50 to $4.00
Ferro carbon-titanium, carloads, producer's plant, per net ton	$200.00

†Duty paid.

Coke

Beehive, Ovens

Prices per net ton

Connellsville furnace	$3.60 to 4.00
Connellsville foundry	4.50 to 5.50
New River foundry	10.00 to 11.00
Wise county furnace	4.25 to 5.50
Wise county foundry	5.00 to 6.00
Alabama furnace	5.00 to 6.00
Alabama foundry	5.50 to 6.50

By-Product

Foundry, Newark, N. J., del	$10.41
Foundry, Chicago, ovens	12.50
Foundry, Boston, delivered	12.00
Foundry, St. Louis	12.00
Foundry, Granite City, Ill.	12.00
Foundry, Alabama	5.50 to 6.50

Semifinished Material

Prices per gross ton

BILLETS AND BLOOMS

4 x 4-inch base

Open-hearth, Pittsburgh	$40.00
Open-hearth, Youngstown	40.00
Open-hearth, Philadelphia	43.17 to 45.17
Bessemer, Pittsburgh,	40.00
Bessemer, Youngstown	40.00
Forging, Pittsburgh	45.00
Forging, Philadelphia	48.17 to 50.17

SHEET BARS

Open-hearth, Pittsburgh	$41.00 to 42.50
Open-hearth, Youngstown	41.00 to 42.50
Bessemer, Pittsburgh	41.00 to 42.50
Bessemer, Youngstown	41.00 to 42.50

SLABS

Pittsburgh	40.00
Youngstown	40.00

WIRE RODS

¼-inch and finer

Wire rods, Pittsburgh	$51.00

Standard extras, $2.50 per ton over ¼-inch; $5 for screw stock; $15 for acid wire rods. Carbon extras, $3 for 0.20 to 0.40; $5 for 0.41 to 0.55; $7.50 for 0.56 to 0.75; $10 over 0.75.

SKELP

Grooved skelp, Pittsburgh	2.30c to 2.50c
Universal skelp, Pittsburgh	2.30c to 2.50c
Sheared skelp, Pittsburgh	2.30c to 2.50c

Shapes, Plates and Bars

Prices per pound

Structural shapes, Pittsburgh	2.30c to 2.40c
Structural shapes, Phila.	2.52c to 2.62c
Structural shapes, New York	2.54c to 2.64c
Structural shapes, Chicago	2.50c
Tank plates, Pittsburgh	2.20c to 2.40c
Tank plates, Philadelphia	2.47c to 2.62c
Tank plates, New York	2.49c to 2.64c
Tank plates, Chicago	2.50c
Bars, soft steel, Pittsburgh	2.30c to 2.40c
Bars for cold finishing, Pitts.	2.55c
Bars, soft steel, Philadelphia	2.52c to 2.62c
Bars, soft steel, New York	2.54c to 2.64c
Bars, soft steel, Chicago	2.40c
Bars, refined iron, Pittsburgh	3.15c to 5.00c
Bars, rail steel, Chicago	2.30c to 2.33c
Bars, rail steel, mill	2.10c to 2.20c
Reinforcing bars, billet, Pitts.	2.30c to 2.40c
Bar iron, common, Phila.	2.47c to 2.57c
Bar iron, common, New York	2.49c to 2.59c
Bar iron, common, Chicago	2.35c to 2.40c
Bars, forging quality, Pitts	2.65c

Hoops, Bands, Shafting

Prices per pound

Hoops, Pittsburgh, under 5 in.	2.75c to 2.90c
Hoops, Pittsburgh, 20 gage, under 1 in.	3.35c to 3.50c
Bands, Pittsburgh	2.75c to 2.90c
Cold finished steel bars, Pittsburgh base, carloads	3.00c
Cold-finished steel bars, base Pittsburgh, less carloads	3.25c
Steel shafting, Pittsburgh	3.00c
Cotton ties, bundle 45 lb. Pittsburgh	$1.70
Cut nails, Pittsburgh	3.00c

Rails, Track Material

Standard bessemer rails, mill	$43.00
Standard open-hearth rails, mill	43.00
Relaying rails, St. Louis	27.00 to 32.50
Relaying rails, Pittsburgh	28.00 to 30.00
Light rails, 25 to 45, mill	2.00c
Angle bars, Chicago base	2.75c
Spikes, railroad, Pittsburgh	3.00c to 3.15c
Spikes, small railroad, Pitts.	3.25c to 3.50c
Spikes, boat and barge, Pitts.	3.50c
Spikes, railroad, Chicago	3.10c
Track bolts, Pitts. Standard	4.00c
Track bolts, Pitts., small	4.75c to 5.00c
Track bolts, Chicago	4.10c
Tie plates, Pittsburgh	2.55c to 2.60c
Ties plates, Chicago	2.60c

Spike, tie plate and truck bolt prices for carlots.

Wire Products

To Jobbers in Carloads

Prices per pound

Wire nails, Pittsburgh	3.00c
Galv'd nails, 1-inch and over	5.25c
Plain wire, Pittsburgh	2.75c
Annealed wire, Pittsburgh	2.90c
Galvanized wire, No. 9 gage, Pittsburgh	3.35c
Barbed wire, painted, Pitts.	3.45c
Barbed wire, galv., Pitts.	3.80c
Polished staples, Pittsburgh	3.45c
Galvanized staples, Pittsburgh	3.80c
Coated nails, count keg, Pittsburgh	2.50c to 2.60c
Woven wire fencing (retailers)	65 off
Woven wire fencing (jobbers)	67½ off

Chain, Piling, Strip Steel

Prices per pound

Chain, 1-in. proof coil, Pitts	6.00c to 6.25c
Sheet piling base, Pittsburgh	2.55c
Hot rolled strip steel, Pittsburgh stamping quality	2.75c to 2.90c
Cold rolled strip steel, hard coils, 1½ inches and wider by 0.100-inch and heavier, base, Pittsburgh	4.75c

Sheets

SHEET MILL BLACK

Prices per pound

No. 28, open-hearth, Pitts.	3.75c to 3.85c
No. 28, bessemer, Pitts.	3.75c to 3.85c
No. 28, open-hearth, Phila.	3.97c to 4.17c
No. 28, open-hearth, Chicago	4.09c to 4.19c

TIN MILL, BLACK

No. 28, open-hearth, Pitts.	3.75c to 3.85c

GALVANIZED

No. 28, open-hearth, Pitts.	4.90c to 5.00c
No. 28 bessemer, Pittsburgh	4.90c to 5.00c
No. 28, open-hearth, Phila.	5.17c to 5.32c
No. 28, open-hearth, Chicago	5.19c to 5.34c

BLUE ANNEALED

No. 10, open hearth, Pitts.	2.85c to 3.00c
No. 10 bessemer, Pittsburgh	2.85c to 3.00c
No. 10, open-hearth, Phila.	3.17c to 3.32c
No. 10, open-hearth, Chicago	3.34c

AUTOMOBILE SHEETS

No. 22 Pittsburgh	5.35c

Tin Plate

Prices per 100-pound box

Tin plate, coke base, Pitts.	$5.50

Iron and Steel Pipe

Base Discounts Pittsburgh to Jobbers in Carloads

	Black	Galv.
1 to 3-inch, butt steel	62	50½
1 to 1¼-inch, butt iron	30	13

Boiler Tubes

Less Carload Discounts—Carloads 4 Points Additional

Steel 3¼ to 3¾-inch	38½
Charcoal iron, 3¼ to 4½-inch	5
Seamless hot rolled, 3½ to 3¾-inch	35

Cast Iron Water Pipe

Prices per net ton

Class B Pipe

Four-inch, Chicago	$61.20 to 62.20
Six-inch and over, Chicago	57.20 to 58.20
Four-inch, Birmingham	52.00 to 53.00
Six-inch and over, Birmingham	48.00 to 49.00
Four-inch, New York	65.60 to 66.60
Six-inch and over, New York	60.60 to 61.60
Standard fittings, Birmingham, base	$110.00

6 to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $20; 3-inch, plus $20; gas pipe fittings, $5 higher.

Class A pipe is $5 higher than Class B.

Scrap Is Down $1 More

General Decline Continues and Consumers Take Little Tonnage—Sales Not Sufficient To Give Support—Some Grades Are Unsalable

SCRAP PRICES, PAGE 1074

Chicago, April 15.—The purchase of about 15,000 tons of heavy melting steel by the Illinois Steel Co. for its Gary works at a reported price of $15 delivered appears not to have proved more than a momentary support for the iron and steel scrap market. This business was distributed rather widely, but sentiment continues weak and many grades have succumbed another 50 cents or $1. At the moment the market is at the general level of $14.50 for heavy melting steel, although some large dealers appraise it at 50 cents lower. Some dealers display more bearishness in their talk than in their willingness to sell at the going level. Practically no market exists for machine shop turnings. Cast borings also are weak. Railroad offerings include 5600 tons by the Illinois Central railroad, 5100 tons by the Rock Island and 1600 tons by the Northern Pacific.

New England Market Listless

Boston, April 15.—Iron and steel scrap prices have dropped to such low levels that yard owners are refusing to sell and transactions have been reduced to extremely small tonnages. Dealers are still completing a few Pennsylvania orders placed a week or 10 days ago and during the past few days have paid $11 shipping point for heavy melting steel. More recently some sales have been entered at $11.50. Skeleton scrap is plentiful and may be obtained in large amounts at $9 shipping point. Foundries seem to have little interest in cast grades and even malleable scrap is available at low prices, with few buyers. Strictly textile machinery scrap has been sold in at least one case recently at $21 delivered. Stove plate is moving at $15 delivered.

New York Market Depressed

New York, April 15.—The iron and steel scrap market continues greatly depressed. Buying is sluggish, and while reductions are not as sweeping as last week, several downward revision have been made. City and No. 1 railroad wrought are off sharply and machine shop turnings and stove plate are down about 50 cents. No change has been made in heavy melting and No. 1 railroad steel. On railroad steel for shipment to Bethlehem, Pa., dealers here are still quoting $15, delivered, and on borings and turnings for delivery to this point, $13.50. They are also paying this price on borings and turnings for shipment to Steelton, Pa. Heavy melting steel for shipment to Conshohocken, Pa. is bought by dealers at $15, delivered.

Available At Own Figures

Pittsburgh, April 15.—Iron and steel scrap continues to be bought in small quantities at almost any figure the holder is willing to accept, buyers practically making their own prices. The largest orders of the past week were lots of 150 or 200 tons each. Price recessions continue, due to absolute lack of consumer demand. Many quotations are 50 cents to $1 or more below levels of a week ago, starting with heavy melting steel at $16 to $16.50 but even that spread largely is nominal in view of the fact that a small tonnage was offered here at $15 and refused. Steel axles are 50 cents lower as are low phosphorus billet and bloom crops and punchings, heavy breakable cast, railroad and agricultural malleable.

Consumers Do Little Buying

Cincinnati, April 15.—Dullness and weakness are the main features of the iron and steel scrap market in this district. Practically no buying is being done by consumers and there is hardly any trading among dealers, even in small lots. Prices continue on their downward course a majority of the grades having been reduced another $1 a ton. The dealers have been allowing recent railroad lists quite largely to go direct to consumers. The abundance of scrap offered by the railroads, together with the light demand are contributing largely to the weakness of the market.

Go Lower In East

Philadelphia, April 15.—Trading in iron and steel scrap is small but the pressure of odd lots on the market continues to force prices down. The total offered is less than in recent months and dealers believe prices are close to the bottom of this movement. They point out that they are paying $10 delivered their yards for mixed scrap which they prepare and ship to consuming plants at the present price.

Inactive at Cleveland

Cleveland, April 15.—Inactivity continues to feature the iron and steel scrap trade here. Consumers are disinterested and the few transactions recorded are among dealers to cover contract obligations. Inquiry also is light and dealers, while believing the low point in prices is about reached, see little prospect of an early buying movement. Price changes during the

(*Concluded on Page* 1029)

Sheet Bar Price Easier

Some Sales in Pittsburgh District Reported at $41—Specifications for Semifinished Material Falling Off

SEMIFINISHED STEEL PRICES, PAGE 1019

Youngstown, April 15.—Unusual dullness is apparent in the semifinished market. About the only tonnage coming off the mills at present is in the form of sheet bars, and these are being rolled or orders taken prior to the opening of this quarter. Quietness in the sheet market is exerting a drooping affect on the volume of sheet bar specifications issued to producers of semifinished material and conditions have reached the point now where it is difficult to schedule sheet bar mills a week in advance. While the price of sheet bars has touched $41, Pittsburgh, in one or two recent instances the open market here has not receded from $42.50, Youngstown or Pittsburgh, as far as investigation discloses. New business for slabs, billets or sheet bars is lacking.

Cleveland Market Quiet

Cleveland, April 15.—The market for semifinished material is quiet. Little business is pending to test prices, and while sheet bars are quoted nominally at $42.50, valley, it is reported that a mill agreed to a price of $41 to apply on a contract taken some time ago. Sales at this figure are understood to have been made in the Pittsburgh territory. The leading producer here is committed for the second quarter and no new business has been taken. Specifications generally are lighter for sheet bars, billets and slabs.

Specifications Lacking

Pittsburgh, April 15.—Specifications, sales and inquiries are lacking in the semifinished market. It is becoming difficult for producers to obtain specifications for sheet bars from their customers to apply upon orders already on their books. As a consequence the $42.50 price is untested. Some buyers claim they have been able to close at $41 but no transactions have been reported definitely at this price. Billet inquiries are absent. An inquiry for slabs has appeared from a blue annealed sheet conversion plant. No other activity has been noted since the recent renewal of contracts for the second quarter on the basis of $40, Pittsburgh. Some forging billet specifications continue to be received each week on contracts where $45 Pittsburgh, was the closing figure.

The $51 price is unchanged as regards wire rods and while most users have closed for their second quarter supplies with regular sources, occasionally an inquiry for 1000 tons or more appears. No new transactions are noted in skelp in connection with which 2.30c to 2.50c base Pittsburgh, continues to be quoted.

Eastern Prices Nominal

Philadelphia, April 15.—The billet market is largely nominal. Rerollers are $38 to $40, Pittsburgh, and forging quality $42.50 to $45.

Pig Iron and Sheet Bar Rail Rates Reviewed

Pittsburgh, April 15.—The Trunk Line association, New York, and the Central Freight association, Chicago, held joint hearings in the local Chamber of Commerce building last week to listen to shippers show cause why pig iron freight rates should not be realigned or increased on shipments from Central Freight association to Trunk Line association territory. The latter territory is from the Atlantic

seaboard to a line drawn from Buffalo through Oil City, Pittsburgh, Wheeling and Parkersburg, to Kenova. The Central Freight association represents territory west of that line to the Mississippi river. Hearings also were held on Thursday to consider the proposal to restore the billet basis of rates on sheet and tin bars as well as slabs, where present rates now are lower. Decisions will be handed down later.

Tin Plate Demand

For Export Rounds Out Mill Schedules For Second Quarter

TIN PLATE PRICES, PAGE 1019

Pittsburgh, April 15.—Lots of 5000, 10,000, 12,000, 15,000, 17,000 and one of 20,000 base boxes of tin plate have been closed for export recently by large makers here. As usual these have been taken lower than the domestic price, but at a premium above the quotations prevailing on foreign tin plate. This is enabling the tin plate producers to round out their schedules for the remainder of the second quarter. Some pressure has been brought to bear to bring out the price announcement for the third quarter or last half. Due to a falling pig tin market the possibility is that no increase will be inaugurated and the price of $5.50 per base box of 100 pounds, Pittsburgh, will be sustained. The average of tin mill operation in this section is above 90 per cent, the leading interest being upon a 95 per cent basis, having lost one turn of a number of its mills at one or two plants, including New Castle last week. At New Castle, limited storage space prevents better operations. Specifications from the canmakers are coming in regularly and shipments of tin plate during April and May will be exceedingly heavy.

Orders Are Satisfactory

Youngstown, April 15.—Production of tin plate in this district continues at 90 per cent of capacity. Orders are reported as satisfactory. Open tonnage for second quarter shipment is beginning to appear on order books. Production plate is quoted at $5.50 per base box, Pittsburgh. One producer has his plant operating entirely on black plate, which is quotable at 3.75c to 3.85c, Pittsburgh.

Ship More Than Bookings

Chicago, April 15.—Bookings by steel producing interests in the Chicago district are falling slightly behind shipments. One interest is balancing shipments with new business but the other is finding its order book shortening somewhat. General operations for the district as a whole are sligthly lower. The number of merchant and nonmerchant blast furnace stacks in blast in this district is unchanged.

Ford Buys Cranes

The Morgan Engineering Co., Alliance, O., has received an order from the Ford Motor Co., Detroit, for 11 five-ton electric traveling cranes for the new steel works of the Ford company at River Rouge.

Coke Production Reduced

Light Demand Develops Price of $3.60 in Distress Tonnages —Foundry Coke Minimum Down to $4.50

COKE PRICES, PAGE 1019

Pittsburgh, April 15.—Beehive oven operators have matched increasing idleness of blast furnaces with less coke production. This leaves a limited supply of free coke pressing the market, but occasionally distress lots are offered at $3.60. On other lots the market prices range from $3.75 to $3.85. Some producers are maintaining a contract price of $4. Others are quoting $3.75 on extended shipments. No contracts have been closed in the week. The Emporium Iron Co. recently was in the market for its second quarter requirements. It has been buying 15 or 20 carlots from different sources for testing purposes. The Lochiel furnace at Harrisburg bought a few carloads for filling in. New inquiries have been issued by smelters for medium or high sulphur coke, including the Mond Nickel Co. The last sale of this grade was made to the International Nickel Co. Port Colborne, covering April requirements of 3000 tons below $3.30. Foundry coke is down 25 cents, $4.50 now being available. Some operators are maintaining $5.50 on high grade coke. They are selling considerably more for the latter part of April than for the first two weeks. Apparently stocks are dwindling. Small sales of premium brands are made around $6.50. Wage reductions are expected in May and this may relieve the situation, making it possible for operators to recoup losses sustained due to present selling below production costs.

Production of coke, according to the *Connellsville Courier* for the week ended April 5 was 210,140 tons, compared with 217,900 tons in the preceding week.

New England Price Lower

Boston, April 15.—By-product foundry coke has been reduced in New England from $12.50 to $12, delivered. Demand for coke has declined during the last few days.

Small Demand, Prices Unchanged

New York, April 15.—Coke prices are unchanged and the demand is small. The market on spot beehive foundry coke may be quoted at $4.75 to $5.25, depending on the grade. Higher prices are being paid for special brands.

Many Ovens Banked

Cincinnati, O., April 15.—Lack of demand has resulted in the banking of scores of ovens in the New River and Wise county coke districts. Additional ovens will be banked soon unless business improves. A decided falling off in demand for foundry coke is noted. Sales are confined to one or two cars. Producers of by-product foundry coke report business fair, with production slightly in excess of shipments. Several sales of New River foundry coke are noted at the new price of $10, ovens, although the market ranges from $10 to $11. Furnace coke continues quiet.

Detroit Price Again Reduced

Detroit, April 15.—By-product coke has been reduced 50 cents a ton, ovens, by the leading producer, making a decline of $1 since April 1. The market is said to be unusually weak.

St. Louis Market Inactive

St. Louis, April 15.—Aside from sales of coke to industrial users for prompt shipment the market is inactive. Contracting is in light volume. With the view of stimulating interest among distributors of domestic coke, the leading east side producer has issued new prices, quoting $6.50 to $8, Granite City. Stocks on yards of by-product makers are large. Connellsville foundry coke is offered at $4.75 to $5.25, but sales are light.

Southern Output Absorbed

Birmingham, Ala., April 14.—The coke market in the South is unchanged. Production is active, and demand is sufficient to absorb the output. Quotations are weak, ranging between $5.50 and $6 for the foundry grade. Foundries and machine shops are increasing operations and are buying small tonnages. The only accumulations noted are at the blast furnace yards.

More Blast Furnaces Are Out of Action

Pittsburgh, April 15.—The Carnegie Steel Co. has taken off six open-hearth furnaces at Farrell, Pa., leaving nine active. Its general average of ingot making capacity remains around 90 per cent. The scheduled basis of operation for the current week is 90 to 92 per cent, although the maximum may not be attained. Independents are averaging between 75 and 80 per cent. The Carnegie Steel Co. has blown out four blast furnaces, leaving 46 of 59 active. Tops are being replaced on one furnace at Farrell, Pa., and one at Youngstown, O. One furnace at Bellaire, O., and one at Clairton, Pa., are out for relining. Witherbee, Sherman & Co., Port Henry, N. Y., blew out their second furnace, and the Rogers Brown Iron Co., Buffalo, is said to be contemplating putting out one. The A. M. Byers Co. is planning to put out its stack some time in May. About May 1 the Struthers Furnace Co. stack may become idle. The Lochiel furnace at Harrisburg, Pa. of E. E. Marshall is finishing up its run and is to be blown out for an indefinite period.

The La Belle sheet plant of the Wheeling Steel Corp., Steubenville, O., which has been idle for several weeks, resumed full operations yesterday. The Shenango and New Castle works of the American Sheet & Tin Plate Co. are operating 13 turns this week, as against 16 turns last week. Storage space at New Castle is limited and this is understood to be the reason for the present curtailment.

American Steel Export Co., New York, has increased its capital from $100,000 to $250,000.

Bar Demand Is Slack

Consumers Find Quick Delivery Avoids Necessity of Covering Ahead —Weaker Prices Develop as Backlogs Are Worked Down

BAR PRICES, PAGE 1019

Chicago, April 15.—Uncertainty over price has had a deterrent effect on business in soft steel bars the past few days. The former quotation of 2.50c, Chicago, may be said to have disappeared and 2.40c now seems to be the top. Shipments of soft steel bars continue to outstrip new business. The recession in the automobile industry is being felt. Many small implement manufacturers have sharply curtailed operations. Order books of local bar makers as a whole have shortened. One maker took 15,000 tons of finished steel from freight car builders last week and had 20,000 tons specified against contracts.

Rail steel bars are weak and operations are being curtailed. The present range of 2.30c to 2.33c, Chicago, may not stand the week out. One mill that has been on double turn has dropped operations to four days a week. Another maker appears to be maintaining a fair backlog.

The reduction to 2.35c, Chicago, in bar iron has not stimulated business, and single turn operations are difficult to maintain.

Sales Hold Steady

Boston, April 15.—In spite of price weakness and declining demand in other products sales of bars during the past week have held practically stationary. The leading seller reports good orders and other companies have found sales while individually small showing a total about level with the previous week. Prices hover close to 2.30c with 2.35c Pittsburgh the high mark.

Demand Is Smaller

Philadelphia, April 15.—Steel bar demand is small and orders are not replacing shipments. The market price continues 2.20c to 2.30c, Pittsburgh, with slightly lower quotations being made in exceptional cases.

Few Specifications Filed

Pittsburgh, April 15.—Volume is missing from the merchant steel bar market with little new business and only restricted specifications from a fair number of buyers. Some producers pressing their customers for specifications have been able to obtain some "accommodation" specifications. These involve standard sizes for which probably a use will be found at any early date. Attractive tonnage buyers could close at 2.25c base Pittsburgh today, the regular market being quoted at 2.30c to 2.40c base Pittsburgh.

Refined iron bars are available at as low as 3.15c, demand being limited and bookings light.

Buying Is Held Back

Cleveland, April 15.—Unsettlement of prices has had its effect in holding up new buying of steel bars and little fresh business has been placed the past week. On the whole buyers are taking out their tonnage already on mill books but are chary of renewing or adding to it under present conditions. Some hold-ups of spring steel and other bar products, relating principally to automotive parts manufacture, have appeared. These are by no means general, however, for the situation is a mixed one since some parts manufacturers are going ahead and taking their tonnage in an uninterrupted way while others feel obliged to curtail owing to the checking of orders from the particular builders they serve. Some mills continue to quote 2.40c, Pittsburgh, as their open price but are meeting competition at lower figures or down to 2.30c. The latter price now seems to represent the general market on desirable tonnage though there is talk of 2.25c. Wide bands continue at 2.75c, Pittsburgh, narrow bands at 2.90c and hoops at 3.00c.

No Cold Finished Cancellations

Pittsburgh, April 15.—Recent suspensions from cold-finished bar users have not been followed by cancellations as in 1920. On the other hand several releases involving attractive tonnages have come from automobile makers. Producers here expect these cases will be often duplicated within the next three or four weeks and consequently are not pressing the market. They are contenting themselves with restricted operating schedules, averaging below 70 per cent. The market is quotably unchanged at 3.00c base Pittsburgh, for carload lots and 3.25c for less-than-carload lots, with March 10 extras applying.

Bolt, Nut, Rivet Demand Continues Slow

NUT AND BOLT PRICES, PAGE 1070

Pittsburgh, April 15.—Piecemeal business in nuts and bolts keeps up and the aggregate for all makers in this section for the past week represents only a fair tonnage. Individual commitments are not large since buyers generally are not anticipating their needs far ahead. Much less-than-carload business is interspersed with a few single carloads. Prices vary, a particularly attractive piece of business developing an extra 5 or even 10 per cent discount under the officially quoted market levels. Similar conditions exist in connection with rivets. Some fairly large structural rivet inquiries are commencing to appear. One eastern railroad is in the market with an inquiry for three or four carloads and several other single carload or 2-carload inquiries are before the trade. The Pennsylvania railroad is in the market for its rivet requirements at Altoona, Pa., shops for the second quarter involving several carloads. The tendency among some makers is to avoid showing undue anxiety over pending business. One located near Pittsburgh is booked up on a full operating rate until July 1. Another is not quite so favorably situated but is avoiding the present minimum quotation. Carload prices on structural rivets are 2.65c and 2.70c, base Pittsburgh, less-than-carload, 2.75c and even 2.70c for small quantities. Small rivets are not above 70 and 10 off on almost any quantity.

Prices Continue Weak

Philadelphia, April 15.—Prices on bolts continue weak, the usual quotation 60, 10 and 5 off with occasionally 60, 10 and 10 off being made. Rivets continue 2.60c to 2.75c, Pittsburgh, depending on the need for business.

Prices Are Shaded

Cleveland, April 15.—Bolt consumers are having little difficulty in obtaining concessions on good sized orders. While 60 and 10 per cent off is the ruling quotation on large machine bolts this price is being shaded and an additional 10 per cent discount is being named by some makers in an effort to obtain business. Large orders are absent but a fair volume of small business is being received. Automobile companies are reported to be suspending their orders.

Rivet demand is small and prices are weak. While the leading maker here continues to quote 2.75c base Pittsburgh and has taken business at this figure, 2.65c Pittsburgh commonly is being quoted. In fact, it is understood if a good-sized tonnage were to come out a lower figure in all probability, would be done.

Price Tendency Is Down

Chicago, April 15.—Business in bolts and nuts again is slightly less and specifications from makers of farm implements have dropped to an extremely low point. The automobile industry continues to take a good tonnage, although reduced operations in the industry are having effect. The maximum for large machine bolts still is 60 and 10 off but this price is weak.

Narrow Hoops in Demand

HOOP PRICES, PAGE 1019

Pittsburgh, April 15.—Narrow hoop and band sizes of hot strips appear to be among the few wanted steel commodities today since makers have good order books and specifications are coming in more freely than in many other finished steel lines. Prices usually are 2.75c to 3.00c although occasionally more is obtained on exceedingly narrow sizes of thin gages because of the limited production possible.

Chain Advance Partial

Pittsburgh, April 15.—Action by the American Chain Co., as noted last week increasing the price of chain $5 per ton, making the base for one-inch proof coil chain 6.25c base Pittsburgh, has not as yet been followed by other manufacturers such as the United States Chain & Forging Co. It still is on a 6.00c base, making the market quotable at 6.00c to 6.25c, base Pittsburgh.

To Hear Scrap Case

Washington, April 15.—The federal trade commission will hear on April 23 the complaint of the Pacific Coast scrap dealers against steel companies

of that district which they claim are operating a scrap buying monopoly.

Little Life

In Market for Ferroalloys—Imported Material Moving

FERROALLOY PRICES, PAG7 1019

Pittsburgh, April 15.—Present transactions in ferroalloys denote but little life. One or two carload lots of ferromanganese are reported disposed of by sellers the past week. Sales all were at the $107.50 seaboard price on imported, net 30 days, or $107.50 seaboard base figure on domestic, the latter subject to the regular discount of ½ per cent for cash within 10 days from date of shipment. Suspensions so far have not been important; on the other hand large users still are calling for deliveries. Spiegeleisen finds no market in this immediate vicinity although in New Orleans some English material 18 to 20 per cent, has been sold at $36 c.i.f. that port in lots of 50 or 100 tons. A Kentucky user likewise bought a similar quantity but with one or two eastern users took domestic material where the freight rates were equalized in meeting foreign competition. Some $35 quotations were mad on imported material but deliveries were dated so far ahead that some of the sales were not closed.

Some interest still is apparent in ferrotungsten in lots of 5000 or 10,000 pounds at a time. High grade material is scarce. What little high grade material is left, as well as the poorer grades, are priced at 87½ to 95 cents It is understood some users are planning to utilize tungsten powder. Ferrovanadium interest seems to be increasing. This material still is quoted at $3.50 to $4, depending upon grade. Specifications on ferrosilicon contracts are coming through in fine shape but no new business is developing. Prices are unchanged at $75 freight allowed on 50 per cent; $40 f.o.b. point of shipment on 15 to 16 per cent and $39 on 12 per cent.

Small Sales Are Rule

New York, April 15.—Purchases of manganese metals are small. Sales of ferromanganese are restricted to carloads and moderate sized lots for early shipment. The price continues firm at $107.50 duty paid tidewater. On spiegeleisen the market continues to be quoted at $35 to $38 furnace for the 20 per cent grade and sales are small.

The New Jersey Zinc Co. is about to put one of its furnaces at Palmerton, Pa., out of blast, which will leave only one furnace at Palmerton active on spiegeleisen.

Release orders received by the larger manufacturers of ferrochrome and ferrosilicon indicate that shipments this month will be about 25 per cent smaller than those of March. This reflects to some extent the reduction in alloy steel specifications as well as the decrease in general steel ingot demands. Prices are unchanged through the list.

A schedule in bankruptcy has been filed by the Knickerbocker Roofing & Sheet Metal Co., New York, with the liabilities of $5857 and assets of $5303.

Plate Tonnages Figured

Bids Submitted on Largest of Tank Projects Involving 25,000 Tons—Good Requirements Pending—Prices Soft

PLATE PRICES, PAGE 1019

Pittsburgh, April 15.—Considerable business is pending in which plate tonnages of fair size play a prominent part. Most of the activity in the plate market, however, revolves about specifications on contracts and these are slowing down somewhat. Buyers are hearing of 2.10c and 2.15c, Pittsburgh, being quoted on certain tonnages in certain districts and wish to duplicate those figures; hence they are restricting their purchases. The lowest level developed in this vicinity this past week has been 2.20c; other quotations being 2.30c to 2.40c, Pittsburgh. No large oil storage tank is up for consideration, only a few single tanks appearing now and then on which competition is particularly keen on the part of Ohio, Indiana and even Illinois fabricators. One or two gas holders still are in abeyance and some barge work as well is contemplated. The J. & J. B. Milholland Co., Pittsburgh, received the contract from the Huntington, W. Va., federal engineers for plate and structural work on dams Nos. 29 to 32, inclusive, on the Ohio river, involving several hundred tons.

Negotiate for Oil Refinery

New York, April 15.—The Bethlehem Steel Co. is negotiating with the Argentine government for the erection of a complete oil refinery, together with tanks, pipe lines and other equipment, entailing an expenditure by Argentina of $14,000,000 to $18,000,000 and a large tonnage of steel. The company says reports that the contract has been signed are premature. The plant ultimately will have capacity for handling 14,000 barrels of oil daily. The plate market remains soft and is undergoing keen competition which is keeping prices down to 2.15c to 2.25c, Pittsburgh.

Current Demand Is Fair

Philadelphia, April 15.—Demand for plates for quick shipment is fair, but generally orders are not replacing shipments and operations show a declining tendency. Considerable tonnage is involved in locomotive inquiries. The Newport News Shipbuilding & Dry Dock Co., is low bidder on two carfloats for the Erie railroad, requiring 1000 tons each. The price here on plates contines 2.15c to 2.30c, Pittsburgh.

Bid On Many Tanks

Cleveland, April 15.—Principal interest in plates in this territory has centered in the large tankage requirements for oil storage in Texas for the McCorkle Pipe Line Co., bids for which went in this week. This project calls for a maximum of 86 55,000-barrel tanks involving approximately 25,000 tons of steel. This is in addition to heavy pipe line requirements for the same company. Some doubt is expressed whether this large contract will be placed completely at this time on account of market conditions. Other new oil field work has come up. One matter involving 2000 tons of 2-inch plates for drip tanks is before sellers. This calls for the heaviest plates that the mills have ever known for work of this character. A new inquiry for 10 oil stills representing several hundred tons of plates has been issued. Other matters pending include 575 tons for a car unloader at Conneaut, O., a large part of which will be plates and 100 locomotives for the Chesapeake & Ohio requiring 4000 to 5000 tons. Plate prices remain weak. The market has settled to a usual figure of 2.30c. Pittsburgh on competitive business although this week a fair tonnage in this territory brought out 2.25c. The 2.40c, Pittsburgh, price, while it has not disappeared, applies to small lots.

Oil Needs Coming Out

Chicago, April 15.—Local tankmakers are figuring on tanks for an oil interest calling for 6000 tons of plates. The 25,000 tons of plates for tanks and pipe lines projected by the McCorkle interests in Texas may be placed shortly. A good part of 15,000 tons of finished material placed by local freight car builders last week was plates. General merchant demand for steel plates is low and reflects the cautious attitude of buyers. The plate price is in a state of flux, and 2.50c, Chicago, now probably most nearly represents the market.

Iron Ore Market Quiet; Few Tonnages Figured

Cleveland, April 15.—Despite the reduction of 80 cents in the price of Lake Superior iron ore the market is dull. The principal business transacted in the week relates to tonnages entered on existing long-term contracts, and for associated consuming interests. Very little has developed in the open market, and some sellers say the reason for this is the widespread effect the reduction in ore is likely to have on pig iron and steel prices and business generally. They predicted that a severe cut in ore prices would have an immediate effect on steel and they say that effect is already being realized. The reason given by the ore producer that made the initial reduction of 80 cents is, in substance, that steel interests have been entering the iron ore business to an ever increasing extent so the business of iron ore producers has been restricted. By reducing the price to the lowest figure consistent with its operating position it can sell ore at less than at which some of the steel interests can produce it. This interest expects to move as much ore in 1924 as it did in 1923.

Several blocks of ore each amounting to 100,000 tons or more are being figured on in the open market. John A. Savage & Co., Duluth, took 65,000 tons of the 250,000-ton order for the Ford Motor Co. The Ford company is not likely to make any further purchases for 1924. Vessel rates for the season have not been established, but various conjectures are heard as to the probable reduction, ranging from 10 cents upward.

Concrete Buying Is Slow

Prospective Business for April Closing Lends More Cheerful Tone to Market—Price Weakness Still Common in Some Districts

REINFORCING BAR PRICES, PAGE 1019

Chicago, April 15.—Some good-sized reinforcing bar jobs in this district are being held up in the belief that present softness in the bar price will develop lower. In this category fall the Palmer house, the Roberts street bridge, St. Paul, and the Soo line ore dock, Ashland, Wis., requiring 1500, 900 and 800 tons, respectively. While these and some smaller jobs are developing slowly they are alive and the condition of the bar market is the major factor in the delay. The Highland Iron & Steel Co., Terre Haute, Ind., is reported to be the recipient of contracts for bars for Indiana road work. The Donnelly building, a 350-ton job, has been held up 30 days. The number of jobs requiring under 100 tons of bars is fair, but in recent weeks warehouse shipments of bars have been declining. Except for extremely small lots of bars, 3.00c, Chicago, has disappeared. The one figure most nearly representing today's market in Chicago is 2.75c, but less than this can be done on attractive business.

Firmer Tone Apparent

New York, April 15.—A firmer tone is noticeable in concrete reinforcing bar prices. While lower figures have not yet entirely disappeared, it now is more difficult to buy concrete bars for mill shipment at less than 2.30c base Pittsburgh. The market on concrete bars out of stock here now may be quoted at 3.00c base, with occasional concessions. The volume of demand is somewhat larger but does not yet reflect the approach of the spring season.

Prices Distressingly Low

Pittsburgh, April 15.—Quietness rules in the reinforcing concrete bar market with distressingly low prices appearing on certain classes of work. One job involving a relatiyely small tonnage developed a bid which, checked out, brought the price of the bars back to 2.20c base Pittsburgh. This price is indicative of what is being done in the market. Bars from warehouse stocks have sold as low as 2.40c, Pittsburgh, other holders will not go below 2.50c. Mill prices are 2.30c to 2.40c, Pittsburgh. The Kaufman & Baer Co. warehouse involving approximately 750 tons is being revived and it is understood that this time it will be awarded. The general contract for the Beck's Run bridge, St. Clair borough, for the Pennsylvania railroad involving about 1000 tons, was let to a Philadelphia contractor.

More Activity Expected

Cleveland, April 15.—More activity is expected in the concrete reinforcing bar market with several large projects nearing the closing point. A good volume of business is pending and most of this is scheduled to be closed before May 1. New inquiry is not as plentiful as that of preceding weeks. On new steel bars 2.30c, Pittsburgh, continues to be quoted on all attractive business, with a few dealers attempting to obtain 2.40c, which has almost disappeared. Warehouse stocks are quoted at 2.75c, Pittsburgh, with the customary shading on desirable tonnages. Rail steel bars are nominal at 2.10c, mill, no business having been placed in this territory in several weeks. Lower prices are reported in outside territory.

Demand Still Is Quiet

Cincinnati, April 15.—Concrete bars are comparatively quiet. Only one award and but few inquiries are noted. The award was 180 tons for the addition to the plant of Schroth Packing Co., to Bourne-Fuller Co. Concrete bars are quoted at 3.50c Cincinnati warehouse.

CONCRETE CONTRACTS PLACED

Awards this week	**4,095 tons**
Awards last week	**3,823 tons**
Awards two weeks ago	**3,190 tons**

1000 tons, Snelling-Mendota bridge, Minneapolis, to American System of Reinforcing.
500 tons, buildings for Ford Motor Co. at St. Paul, to Kalman Steel Co.
480 tons, building for Western Shade Cloth Co., Chicago, to Kalman Steel Co.
475 tons, Alleghany Realty building, Philadelphia, to Concrete Steel Co.
260 tons, plant for Libbey-Owens Sheet Glass Co., Toledo, O., to Building Products Co.
250 tons, track elevation work for Pennsylvania railroad, Cleveland, to Bourne-Fuller Co.
200 tons, Illinois road work, to Concrete Steel Co.
180 tons, addition to plant of Schroth Packing Co., Cincinnati, to Bourne-Fuller Co.
170 tons, O'Riordan garage, Brookline, Mass., to Concrete Steel Co.
170 tons, Sanford Mills, Sanford, Me., to Concrete Steel Co.
160 tons, addition to Orrington hotel, Evanston, Ill., to Kalman Steel Co.
150 tons, bank building at Huntington, W. Va., to Kalman Steel Co.
100 tons, road work in northern Ohio, to Paterson-Leitch Co.

CONCRETE CONTRACTS PENDING

1000 tons, Beck's Run bridge, St. Clair borough, Pittsburgh, for Pennsylvania railroad; general contract awarded to Philadelphia contractor.
760 tons, Medical building, Seattle; pending.
750 tons, Kaufman & Baer Co. warehouse, Pittsburgh, revised bids in; contract about to be awarded.
500 tons, Stimson building, Seattle; pending.
400 tons, surgical building for Miami Valley hospital, Dayton, O.; Max Penker & Sons, Cincinnati, general contractor.
150 tons, building for Hardin-Lavin Co., Chicago; bids to be asked shortly.
150 tons, athletic stadium for the University of West Virginia; Morgantown, W. Va.; bids closed April 15.
150 tons, St. Teresa Home for the Aged, Silverton, O.; Max Penker & Sons, Cincinnati, general contractor.
100 tons, by Roberts & Schaefer & Co., Chicago, for a coaling station at Prichard, W. Va., for Chesapeake & Ohio railroad; bids to be asked shortly.
100 tons, James Gamble Nippert memorial stdium, University of Cincinnati, Cincinnati; M. J. Roche Construction Co., general contractor.

Institute Calls Meeting

The annual meeting of the American Iron and Steel institute has been called for Monday, May 25 at the institute headquarters, 40 Rector street, New York to elect directors and transact other business. The annual meeting of the institute is distinct from the general meeting, also to be held in New York in May for the reading of papers. The general meeting is to be held May 23.

Large Pipe

Lines Reaching Closing Point—Heavy Awards Of Cast Pipe Made

PIPE PRICES, PAGE 1070

Pittsburgh, April 15.—Large individual orders for line pipe remain in the background as yet although tubular goods makers are hopeful that one or two propositions involving 60,000 to 80,000 tons each will be wound up this week. In the meantime numerous orders continue to be placed for pipe of various kinds although boiler tubes, mechanical tubing, etc., are inactive. In no case does the individual order for pipe exceed 100 tons but because they are so numerous the aggregate is pleasing, and steel producers wish that every other line were as active. Operations average above 90 per cent, some plants running all pipe furnaces, both buttweld and lapweld, 100 per cent. Demand upon jobbers appears to be opening up for standard full weight merchant pipe to the sustained building programs, and these are due for a considerable increase now that building trades wage rates have been settled upon for another year.

Operations Are High

New York, April 15.—Cast iron pipe shops in this district are all running at a good rate, but this activity is more of a reflection of earlier buying than of present good business. The market at present appears slow. It is virtually devoid of municipal demand and private buying has tapered off. With operations well maintained and the possibility of a revival in buying in the near future, prices remain steady at $65.60 to $66.60, New York, for 4-inch pipe and $60.60 to $61.60 for 6-inch and over.

The Societe Anonyme Metallurgique de Aubrives et Villerupt, France, participated in the 5000 tons of cast iron pipe ordered by Buenos Aires mentioned on page 715 of the March 13 issue of IRON TRADE REVIEW. This company, in conjunction with the Societe des Hauts Fourneaux et Fonderies de Pont-a-Mousson in France and the Societe des Conduites d'Eau, Liege, Belgium, has recently participated in a number of important cast-iron pipe orders for shipment to Central and South America.

Two Awards Total 9000 Tons

Chicago, April 15.—The United States company has been awarded 5446 tons of pipe and 100 tons of special fittings by the city of Chicago and 3295 tons by the city of Milwaukee. The 3200 tons at Barberton, O., on which bids were rejected, will come up again next Monday. Most makers are well booked up for two to three months but large sizes still are open. The range on cast iron pipe 6-inch and over continues at $57.20 to $58.20, Chicago, and on 4-inch $61.20 to $62.20, Chicago.

Trade Continues to Improve

Birmingham, Ala., April 14.—The cast

iron pipe trade in the Birmingham district continues to show improvement. The American Cast Iron Pipe Co. is operating to capacity.

CAST IRON PIPE PLACED

5446 tons, pipe and 100 tons special fittings, Chicago, to the United States Cast Iron Pipe & Foundry Co.
5050 tons, Portland, Oreg.; to United States Cast Iron Pipe & Foundry Co.
3295 tons, Milwaukee, to the United States Cast Iron Pipe & Foundry Co.
350 tons, Rock Island, Ill., to National Cast Iron Pips Co.
334 tons, Rochester, Minn., to American Cast Iron Pipe Co.
187 tons, Santa Anna, Cal., to American Cast Iron Pipe Co.
135 tons, Wolfe City, Tex., to American Cast Iron Pipe Co.
135 tons, Fostoria, O., to American Cast Iron Pipe Co.
100 tons, Michigan City, Ind., to the National Cast Iron Pipe Co.

CAST IRON PIPE PENDING

7361 tons, Santa Monica, Cal.; general contract to Claude Fisher.
2300 tons, Barberton, O.; bids to be taken again, on April 21.
300 tons, Hutchison, Kans.; bids to be taken shortly.

Wire Demand Less

Buyers Confine Purchase to Absolute Needs and Shipments Are Reducing

WIRE PRICES, PAGE 1019

Pittsburgh, April 15.—Some slight slackening is noted in connection with wire products specifications and new business is limited. Buyers, both jobbers and users, are restricting purchase to absolute needs. Improvement in this regard is expected to materialize within the next three or four weeks, particularly in fencing, and barbed wire after spring planting has been done. In the meantime, without replacements and with good shipping records being made by every producer, backlogs are being reduced. Wire mill operations generally are on a 70 per cent average and nail mills are registering a slightly higher figure. Small nails still are in good demand. Much talk is encountered about lower prices but this originates entirely with buyers and no formal reductions have taken place. Concessions apparently are confined to freight equalization into territories reached by southern Ohio nail makers. Small manufacturers recently inaugurated a decline to 2.60c from 2.70c base Pittsburgh, on cement-coated nails and this action has been followed by the larger makers. Since, however, some 2.50c prices have put in their appearance.

Jobbers Ordering More

Chicago, April 15.—Demand for wire and wire products from jobbers increased slightly last week but demand from the manufacturing trade decreased somewhat. Fencing and allied products are not moving at the rate the season normally dictates. Operation of wire and wire products mills have decreased but prices are unchanged.

To Elect Officers

The annual meeting and election of officers of the Cleveland Purchasing Agents' association will be held at the Winton hotel, April 17 at 6:30 p.m. L. F. Boffey, formerly secretary of the National Association of Purchasing Agents and now editor of the *Purchasing Agent,* will be the principal speaker.

Sheet Consumption Heavy

Majority of Users Taking Normal Tonnages, Though Mill Output Is Reduced and Prices Are Soft

SHEET PRICES, PAGE 1019

Pittsburgh, April 15.—Although sheet consumers practically without exception are operating at normal or even abnormal rates for this season of the year, new sheet buying continues to slacken. In numerous directions specifications on contracts are held to an absolute minimum, or withheld entirely. Stove and range industries, stove pipe and elbow makers; other manufacturers of domestic articles; agricultural implement manufacturers; small tank makers; formed ceiling and cornice manufacturers; automotive and railroad lines, all are furnishing specifications for sheets as needed. Stocks in their hands are low. Users being able to obtain satisfactory deliveries from any one of a number of sources of supply are not anticipating their distant future needs but are pursuing a hand-to-mouth buying policy. Suspensions are numerous but unimportant since they are followed by reinstatements within a week or two. Automobile and automobile parts manufacturers, particularly the body makers, have been ordering freely and the tonnages involved have been large in the aggregate. These are for prompt needs. Some buying for May requirements probably will be arranged within a week or two by representative automobile manufacturers who already have fully covered on their April requirements. Some makers report that business from auto body makers the past two weeks has been heavier than in the past two months. Price shows an unchanged range. In no case, however, has the concession exceeded $3 per ton under the levels of the American Sheet & Tin Plate Co., which are 3.00c, 3.85c, 5.00c and 5.35c, Pittsburgh, on blue annealed, black, galvanized, and full-finished automobile sheets, respectively. The latter interest has enough business on its books to run at its present rate until July 1 providing all specifications are received. Already the majority of these orders are in the form of specifications. Sheet mill operations are averaging a trifle less, being between 70 and 75 per cent of capacity.

Concessions Are Offered

Boston, April 15.—Concessions are being made in sheet sales. A recent order for 100 tons of blue annealed is understood to have been placed at 2.75c, Pittsburgh.

Output Reduced; Prices Weaker

Youngstown, April 15.—Curtailment of buying in the sheet market has caused operations to decline from 82 to 73 per cent. Sharp competition is apparent. Mills hard pressed for tonnage are seeking business at 3.60c Pittsburgh, for black sheets. The majority of producers here have not been required to take black tonnage at this figure. The price of galvanized is somewhat stronger than that of black sheets but any quotation above 4.90c, Pittsburgh, will not get business. Buying of galvanized is light. Blue annealed is quotable at 2.85c to 2.90c; black 3.60c to 3.75c and galvanized 4.90c Pittsburgh. Hand-to-mouth-buying continues in the highgrade sheet market although an improvement in the buying within 30 to 60 days when some attention will be given to changes in automobile body design. A marked decrease in the number of hold-up requests has occurred and delayed shipments are being released. No sign of deviation from the full market price of 5.35c for No. 22 gage is apparent here. The number of pleasure cars in storage throughout the country totals into the thousands, and until this surplus is absorbed not much increase in demand is expected in the highgrade market.

Competition Continues Keen

Chicago, April 15.—New business in steel sheets was at a decreased level last week, partially due to the unsettled price condition. Manufacturers outside the Chicago districts still are actively seeking business here and make the spread 4.90c to 5.00c, Pittsburgh, for galvanized, 3.75c to 3.85c for black and 2.90c to 3.00c for blue annealed. The Japanese have inquired for 2400 tons of light black sheets in the past week but little Japanese business is being taken here. The local maker is comfortably booked for the second quarter.

Quote Lower On Spot Tonnage

Philadelphia, April 15.—The sheets market reflects weakness, and mills want immediate business, quoting considerably lower on spot tonnage than on forward orders. The desire for business is indicated by bids opened last week for 400 to 500 tons of automobile license plate sheets for delivery to the Trenton penitentiary. Practically all makers quoted materially under the market. Galvanized sheets now are 4.85c to 4.90c Pittsburgh. Black sheets are 3.65c to 3.75c and blue annealed 2.85c to 3.00c.

More Spot Fluorspar Sold

Pittsburgh, April 15.—Shipments of fluorspar from some Kentucky mines have been interfered with recently by river floods and this has caused some spot business to develop in this locality. Several sales were arranged involving single carloads to 100 or 250 tons. The larger order developed $19.50 f.o.b. Kentucky mine, while on the smaller business $20 prevailed. Some foreign fluorspar has been offered here at about the equivalent of the delivered basis for domestic spot. While the latter is guaranteed 85 and 5 per cent, some of the foreign spar is said to be 88 and 5 per cent. From Harrisburg, Pa., east this foreign spar is having somewhat the advantage on account of the freight differential.

The Reece Button Hole Machine Co., Boston, for the year ended Dec. 31, 1923, reports net earnings of $205,204, equal to $2.05 a share on the 100,000 shares of stock compared with $256,194 or $2.56 a share in 1922.

Shape Awards Heavier

Palmer House at Chicago Takes 16,300 Tons, Western Electric Co. 8000 and Railroad Bridgework 5700—March Bookings Drop

STRUCTURAL SHAPE PRICES, PAGE 1019

Washington, April 15.—Bookings of structural shapes in March were at the rate of 184,600 tons as compared with 189,800 tons in February and a monthly average in 1923 of 166,833 tons, according to the department of commerce. Operations were at 71 per cent of capacity in March as compared to 73 per cent in February and a monthly average in 1923 of 64.2 per cent. Bookings by the 156 companies reporting in March totaled 164,020 tons as compared with 173,207 tons for 175 companies in February.

For comparative purposes, the figures below are prorated to obtain the estimated total for the United States of a capacity of 250,000 tons per month for 1922 and 260,000 tons for 1923 and 1924. The figures represent the tonnage booked each month by 177 identical companies, six of which now are out of business, with a capacity in 1923 of 234,057 tons per month.

	Actual bookings tons	Per cent of capacity	Estimated total bookings
1922 total	1,690,566		1,921,250
1922 mo. aver.	140,881	64	160,104
January, 1923.	173,668	73	189,800
February	185,283	78	202,800
March	220,832	93	241,800
April	186,779	79	205,400
May	132,441	56	145,600
June	118,708	50	130,000
July	118,032	50	130,000
August	135,530	57	148,200
September ...	122,083	52	135,200
October	112,792	48	124,800
November	125,761	54	140,400
December ...	187,429	80	208,000
1923 total....	1,819,338		2,002,000
1923 mo. aver.	151,612	64.2	166,833
January	165,219	71	184,600
February	173,207†*	73	189,800
March	164,020**	71	184,600

†Revised. *Reported by 175 companies with a capacity of 237,345 tons. **Reported by 156 companies with a capacity of 232,045 tons.

Buying Movement Gains

New York, April 15.—More than 31,000 tons is involved in the larger structural projects placed in the eastern district during the past week. Of this amount, 8000 tons is for additional units for plant at Kearny, N. J., of the Western Electric Co., awarded to McClintic-Marshall Co. This brings the total requirements of this project so far up to 12,000 tons, the American Bridge Co. booking 4000 tons some time ago. Additional tonnages are to be brought out later. A feature of buying has also been the award of 5050 tons for five schools, and 5700 tons for bridge work for the Baltimore & Ohio railroad.

Inquiry also has shown an improvement, with 5000 tons for an apartment hotel, in this city, and 4300 tons for the De Kalb subway extension outstanding items. The market appears more active than in several weeks. The plain shape market is showing a little more strength, but prices still may be regarded as easy at around 2.30c to 2.40c, Pittsburgh, on fair sized lots.

Demand Is Quieter

Boston, April 15.—For the first time in many weeks steel mills report quieter demand for structural shapes. New projects, continue to develop. The Chatham hotel, Boston, is active and this project will call for 3000 tons. The Statler hotel calling for 8900 tons is expected to be let any day. Prices are softer. The leading steel companies are quoting 2.30c to 2.35c, Pittsburgh but some of the smaller makers are offering shapes at 2.25c and plates at 2.20c.

Competition Grows Keener

Philadelphia, April 15.—Structural shape demand is fair but is not equal to shipments. It is estimated that the eastern output is about 70 to 75 per cent of capacity. Considerable competition exists for business. Plain material prices continue 2.20c to 2.30c, Pittsburgh, with lower possible on attractive tonnages.

Small Work Predominates

Pittsburgh, April 15.—If successful bids on material fabricated and erected are any criterion, many fabricating shops still are hungry for work and sacrificing profit, overhead, etc., in order to obtain it. Small work appears to predominate. Three or four bridges at Buffalo requiring about 2500 tons have not as yet been let although the Independent Bridge Co. is low bidder on two involving about 2000 tons, and the American Bridge Co. is low bidder on one involving about 300 tons. The inquiry rate is well sustained and bidders expect that considerable work will be let this week. Plain material is priced from 2.30c to 2.40c, Pittsburgh.

Buyers Are More Active

Cleveland, April 15.—More activity is noted in the local structural shape market. Buyers appear ready to close on work which has been pending for several weeks. New inquiry is not large, but several projects are scheduled to come up for figures this spring which will require good tonnages. American Bridge Co. was awarded 4100 tons for the Liberty Bank building, Buffalo, N. Y. The Libbey-Owens Sheet Glass Co., Toledo, O., bought 1200 tons of shapes from Massillon Bridge & Structural Co., Massillon, O.

One local fabricator has closed on two carloads of Belgian shapes netting a price of about 2.20c, delivered, Cleveland. This is the first foreign structural steel to appear in this district. An inquiry is out for 800 tons of channels for a lake boat, which is to be of all channel construction. Plain material prices still show a wide range, some mills endeavoring to maintain the 2.50c. Pittsburgh, price. The bottom of the market is quoted at 2.25c, Pittsburgh, with most of the present tonnage moving at a higher level.

Fewer Inquiries Coming Out

Cincinnati, April 15.—Structural activity last week was rather slow. While some substantial tonnages are pending little fresh inquiry of importance is out and sizable orders are scattered. Inquiries on small tonnage lots continue at fairly good volume. The most important involves 425 tons of shapes for the new Baker alley gas station of the Union Gas & Electric Co. The market on plain shapes may be quoted at 2.30c to 2.40c, Pittsburgh.

Palmer House Is Awarded

Chicago, April 15.—The 16,300 tons of structural steel in the Palmer house, Chicago, will be supplied by the American Bridge Co. This interest also is understood to be near closing for the 15,000 tons in the Stevens hotel, Chicago. The 340 tons in the Woodward-Wight warehouse at New Orleans went to the Lukens Steel Co. for $34,000 erected, or $100 a ton. The 2019 tons in a bank building at Dallas, Tex., went to a local interest, and like the New Orleans warehouse, at a low price. It is thought the placement of some of these good sized jobs will bring out the smaller ones. Price uncertainty also is a factor making for delay. A pipe line project for the McCorkle interests in Texas will require 1000 tons of shapes, to be placed shortly. The top of the plain material market appears to be 2.50c, Chicago.

Ford Motor Co. is in the market for 10,000 tons for two plants to be located at Dallas, Tex., and Chicago.

STRUCTURAL CONTRACTS PLACED

Building awards this week..... 58,572 tons
Building awards last week ..... 15,731 tons
Building awards two weeks ago.. 38,960 tons

16,300 tons, Palmer house, Chicago, to the American Bridge Co.

8000 tons, additional units for the Western Electric plant at Kearny, N. J., to McClintic-Marshall Co.

5700 tons, bridgework for the Baltimore & Ohio railroad, to the Fort Pitt Bridge Works.

4100 tons, Liberty National bank, Buffalo, N. Y., to the American Bridge Co.

4000 tons, harbor sheds for San Pedro, Cal., to United States Steel Products Co.

2400 tons, Bush street building for Pacific Telephone & Telegraph Co., San Francisco, to Golden West Iron Works of Dyer Bros. Previously reported divided between Dyer Bros. and Golden Gate Iron Works.

2200 tons, schools No. 82, Bronx and No. 220, Brooklyn, to Easton Structural Steel Co.

2019 tons, New Republic Bank building, Dallas, Tex., to the Mosher Steel & Machinery Co.

1900 tons, schools Nos. 216 and 217, Brooklyn, N. Y., to Taylor-Fichter Steel Construction Co.

1600 tons, warehouse for Ludwig Bauman, Long Island City, L. I., N. Y., to Levering & Garrigues Co.

1500 tons, Twelfth Street bridge, Kansas City, Kans., to Wisconsin Bridge & Iron Co.

1200 tons, plant for Libbey-Owens Sheet Glass Co., Toledo, O., to Massillon Bridge & Structural Co.

1000 tons, bridge and other work for the Indiana Harbor Belt railroad, to the American Bridge Co.

1000 tons, coal pocket, Everett, Mass., to New England Structural Co.

950 tons, school No. 83, Bronx, to George A. Just & Co.

900 tons, municipal bridge, New York, to Bethlehem Steel Corp., reported last week as low.

800 tons, bridgework for the Virginian railway, to the American Bridge Co.

650 tons, professional office building, East Fortieth street, New York, through Fred T. Ley, to A. E. Norton, Inc.

600 tons, powerhouse at Terra Haute, Ind., to Indiana Bridge Co.

500 tons, building for the Merchants Refrigerating Co., Varick and North Moore streets, New York, to Levering & Garrigues Co.

500 tons, substation for the Boston Edison Electric Co., Boston, to the New England Structural Co.

340 tons, Woodward-Wight Co. warehouse, New Orleans, to Lukens Steel Co.

325 tons, Bal-Mar office building, Baltimore, to Dietrich Bros.

300 tons, pulverizing plant for the Metropolitan Power Co., Middletown, O., to the Lehigh Structural Steel Co.

300 tons, dry color and insecticide unit for Pittsburgh Plate Glass Co., Milwaukee, to Lakeside Bridge & Steel Co.
300 tons, loft East Twenty-sixth street, New York, to Harris Structural Steel Co.
285 tons, shapes and 500 tons plates for dredger hull, Portland, Oreg., to Wallace Equipment Co.
235 tons, Jackson Park National bank, Chicago, to Union Foundry Co.
218 tons, St. Ita's church, Chicago, to unnamed fabricator.
200 tons, tainter gates for Arkansas Light & Power Co., Hot Springs, Ark., to Lakeside Bridge & Steel Co.
175 tons; substation, General Electric Co., Buffalo, N. Y., to Kellogg Structural Steel Co.
150 tons; Columbia Paper Mills, Minnetto, N. Y., to Kellogg Structural Steel Co.
125 tons, Gest street bridge, Cincinnati, to Mt. Vernon Bridge Co.
110 tons, bridgework at Allentown, Pa., for Philadelphia & Reading railroad, to McClintic-Marshall Co.
100 tons; substation and transmission material for Niagara, Lockport & Ontario Power Co., Buffalo, N. Y., to Bancroft Jones Corp.
100 tons, addition to building Franklin Simon department store, New York, to Hay Foundry & Iron Works.
100 tons, foundry flasks for Buckeye Steel Castings Co., Columbus, O., to McClintic-Marshall Co.

STRUCTURAL CONTRACTS PENDING

10,000 tons, Ford Motor Co. plants each 5000 tons, at Dallas, Tex., and Chicago; pending.
5000 tons, apartment hotel, Lexington avenue, from Forty-eighth to Forty-ninth street, New York; bids asked.
4300 tons, De Kalb subway extension, Brooklyn; bids to be closed through the Transit Commission, April 25.
2500 tons, manufacturing plant near Trenton, N. J.; pending.
2000 tons, Leader store, Baltimore; pending.
2000 tons, two bridges at Buffalo; Independent Bridge Co., low bidder.
2000 tons, building for Maddock Pottery Co., Trenton, N. J.; pending.
1700 tons, addition to Commercial high school, West Sixty-fifth street, New York; bids close May 13.
1250 tons, school No. 126, Queens, New York; bids rejected as there were not a sufficient number.
1200 tons, municipal building for Akron, O.; bids in April 21.
1000 tons, pipe line for McCorkle Pipe Line Co., Oklahoma to Texas; pending.
1000 tons, Seaman Church institute, South street, New York; pending.
1000 tons, addition to Salaam Temple, Newark, N. J.; pending.
900 tons, apartment for Vincent Astor at 840 Fifth avenue, New York; pending.
800 tons, building extension for Philadelphia Rapid Transit Co., Philadelphia; pending.
750 tons, Morgantown, W. Va., high school; bids being taken.
700 tons, bank, New Bedford, Mass.; pending.
700 tons, bridgework for the Norfolk & Western; bids closed April 21.
600 tons, (estimated) St. Joseph's Parochial school, 26 East Eighty-seventh street, New York; bids asked.
500 tons, addition to school No. 95, New York; previously reported as pending, bids close April 22.
500 tons, Bankers Investment Trust Co., Boston; bids being taken.
425 tons, gas station for Union Gas & Electric Co., Cincinnati; bids being taken.
400 to 500 tons, bridges for Pennsylvania railroad; pending.
400 tons, telephone exchange, Huntington, W. Va.; bids asked.
350 tons, Bell telephone exchange, Oaklane, Pa.; pending.
350 tons, McKees Rocks, Pa., school house; general contract awarded J. G. Fullman Co., Pittsburgh.
300 tons, warehouse for Bourne-Fuller Co. at Cincinnati; to be closed this week.
300 tons, bridge at Buffalo; American Bridge Co., low bidder.
250 tons, building for Bowler Foundry Co., Cleveland; A. G. Simon, architect. Steel to be bought this week.
200 tons, Bell telephone exchange, Hazelton, Pa.; pending.
200 tons, synagogue, Eastern Parkway, Brooklyn, N. Y.; specifications expected out shortly.
150 tons, remodeling of Citizens' building for Union Square Realty Co., Cleveland; bids in.
100 tons, American National bank, Binghamton, N. Y.; pending.
100 tons, factory unit for General Electric Co. at Philadelphia; pending.
Tonnage not stated, 10-story Towell building, Twenty-fourth street and Euclid avenue, Cleveland; W. S. Lougee, architect; pending.

Railroad Buying Recovers

Purchase of 131,245 Tons of Rails by Southern Pacific and 7120 Cars by Chesapeake & Ohio Features Market

RAILROAD TRACK MATERIAL PRICES, PAGE 1019

New York, April 15.—Car buying again was the dominant factor in railroad business last week, the Chesapeake & Ohio closing on 7120 cars and 100 engines. Although the companies receiving the contracts have not been disclosed the order was comprised of the following classes of rolling stock: 5000 all steel hopper cars, 2000 automobile box cars, 100 cabooses, 15 express cars, 5 diners and 100 Mikado type locomotives.

The Burlington closed on 1000 stock cars and the Missouri Pacific on 1000 automobile cars. New inquiry is featured by a lot of 2000 refrigerator cars for the American Refrigerator Transit Co.

The Southern Pacific Lines last week placed orders for 131,245 tons of rails, of which 31,585 tons are to be shipped prior to June 30, 1924, and the remaining 90,600 tons between Jan. 1, and April 30, 1925.

Included in locomotive orders are 10 for the Chicago, Rock Island & Pacific and two for the Nevada Consolidated Copper Co., both contracts going to the American Locomotive Co.

The Union Pacific is reported as having awarded contracts for 20 locomotives to the American Locomotive Co. The New Haven is inquiring for 15, the Seaboard Air Line for 30, and the Pennsylvania is expected to place 50 locomotives to its own shops.

Conditions Unchanged for Weeks

Pittsburgh, April 15.—Similar conditions to those prevailing in the light rail market for several weeks past continue. The price is unchanged at 2.00c, base Pittsburgh, although some rail-steel light rails are available at less. Track accessory demand is falling off somewhat. Suspensions have not been sufficiently important to curtail operations of spike or tie plate plants. In this locality these are running practically full. The Great Northern, the Pennsylvania, and a few other railroads recently were in the market for tie plates, spikes or track bolts. Prices are unchanged on the quoted bases.

Southern Pacific Rails Placed

Chicago, April 15.—The Southern Pacific railroad has placed 131,245 tons of steel rails, giving 63,000 tons to the Tennessee Coal, Iron & Railroad Co., 60,745 tons to the Colorado Fuel & Iron Co., and 7500 tons to the Inland Steel Co. The 18,000 tons of angle bars, bolts and spikes to accompany such a tonnage of rails will probably be placed shortly by the road's purchasing agents in New Orleans and San Francisco. The Southern Pacific is understood to have the necessary tie plates. One maker of track fastenings in this district is operating full. Specifications for fastenings and rails placed early in the year are heavy. The Chesapeake & Ohio railroad is about to close on 2400 tons of track fastenings and the Nickel Plate on an unstated tonnage.

Missouri Pacific railroad has awarded repairs to 1200 cars and has placed 1000 automobile cars. The Southern Pacific, Santa Fe, Nickel Plate and Rock Island railroads have placed passenger equipment, most of which has gone to the Pullman Co.

It is reported in the market that railroad buying will be slowed up this quarter and will increase in the third quarter, but some of the western roads in good financial condition are showing no disposition to slow up, as evidenced by the Southern Pacific and Santa Fe, which are going ahead with their programs.

CAR ORDERS PLACED

Chicago, Burlington & Quincy 1000 stock cars, to the Streator Car Co., and 6 passenger cars to the American Car & Foundry Co.
Chicago, Rock Island & Pacific railroad, 8 diners and 5 baggage cars, to the Pullman Co.
Gulf, Mobile & Northern, two gasoline cars, to the J. G. Brill Co.
Missouri Pacific, 1000 automobile cars to the Pennsylvania Car Co., and the following repairs: 600 box cars to the Sheffield Car & Equipment Co., 400 gondolas to the American Car & Foundry Co., and 200 steel gondolas to its own shops.
Nickel Plate, 12 passenger and combination cars, to the Pullman Co.
Santa Fe, 10 postal cars to the Pullman Co.; this is in addition to 40 miscellaneous coaches reported as placed with the same company in last week's issue.
Southern Pacific, 10 interurban coaches to the Pullman Co., 13 passenger and combination cars, to the Standard Steel Car Co., and 6 electric motor coaches to the St. Louis Car Co.
Union Pacific, 93 cabooses, to own shops.
Western Electric Co., four logging cars, to the Magor Car Co.

CAR ORDERS PENDING

American Refrigerator Transit Co., 2000 refrigerator cars, inquiry issued through the Missouri Pacific; pending.
American Rolling Mill Co., Middletown, O., 12 gondola car bodies; pending.

Extras on Cold-Finished Alloy Steels Raised

Leading producers, effective April 15 have put out a new standard classification of extras on cold-finished alloy steel which embodies a number of important changes over previous lists. On rounds, where the base size previously was 1½ to 3 inches it is now 2¼ to 2⅞ inches. Rounds, hexagons and squares are considered standard in the new card by 32nds up to 1 31/32-inch inclusive as against up to 1-inch inclusive on the former card, and by 16th from 2 inches up to the maker's limit where formerly this applied on larger than 1-inch sizes. For total tolerance less than .004 inch but more than .002 inch, 50 cents per 100 pounds net now is charged and for total tolerance of .002 inch and less but more than .001 inch for standard sizes only up to 2-inch, $1 per 100 pounds net is asked. For analysis, the new card provides that 0.25 carbon and less is base. For carbon 0.26 and over the extra is $1 per 100 pounds. Quantity differentials for less than 2000 pounds have been raised to $0.20 per 100 pounds from 1000 to 1999 pounds and to $0.50 per 100 pounds on less than 1000 pounds.

The Nonferrous Metals

Shipments Heavy but New Buying Light—Copper Is Exception and Turns Firm After Dullness

	Copper delivered Electro	Copper delivered Lake	Spot tin New York Straits	†Lead basis New York	Zinc basis St. Louis	aluminum Spot†	antimony Spot	nickel Spot
April 9	13.37½	13.62½	50.50	8.37½	6.20	27.00	9.50	28.00
April 10	13.37½	13.62½	50.25	8.25	6.20	27.00	9.50	28.00
April 11	13.37½	13.50	48.50	8.00	6.10	27.00	9.50	28.00
April 14	13.37½	3.50	48.62½	8.00	6.10	27.00	9.50	28.00
April 15	13.50	13.62½	48.75	8.00	6.10	27.00	9.37½	28.00

†Outside market quotation.

NEW YORK, April 15.—Consumers of nonferrous metals have been taking heavy shipments of material and they have been operating their plants at a high rate. However, they have continued to buy cautiously, for immediate, unfilled requirements only, reflecting the feeling in business generally.

Recent news has been constructive from a market standpoint. The completion of the Dawes report, its character and its probable acceptance by Germany and the allies are factors of the utmost importance to copper in particular, and to the other metals in only slightly less degree. Statistics made public for March show deliveries of copper surpassing all records, amounting to 270,000,000 pounds, with refinery production only 218,000,000, so that stocks were reduced by 52,000,000 pounds, to 240,000,000 pounds as of April 1. Prices declined to 13.37½c delivered the past week, though several producers did not meet this price. Casting copper sold down to 13c, then recovered to 13.12½c and 13.25c refinery. After prices had broken 13.50c, consumers showed more interest, bought a good tonnage and copper recovered to 13.50c, delivered.

Zinc prices declined steadily, to 6.10c, East St. Louis, reflecting the light galvanizing demand and the low level of London prices. The March statistics, however, showed a decrease in stocks 5118 tons, with the unusually large shipments of 52,893 tons, of which 5968 tons went for export.

The American Smelting & Refining Co. reduced its official contract price for lead a total of $15 a ton from April 3 to April 11, while the outside market has continued to lead the decline. The open market lead price has dropped from 9.87½c, New York, as of March 20, to 8c, New York. Buying has been almost at a standstill, due to the fact that buyers generally covered some time ago for April and have no incentive to buy in the present unstable market.

Tin prices have again fluctuated widely, due to the operations of powerful opposing factions in London. On April 11, the price collapsed £15 5s, recovering a part of this loss Monday and then easing again today in London but holding steady here on account of rise in exchange. Both consumers and operators here have taken little interest in the market.

The decline in antimony was checked at 9.50c and then resumed today, 9.37½c.

Aluminum users are generally covered for their first half requirements and there has been little interest in resale offers of virgin ingot at the prices quoted by the domestic producer relatively of 27c and 28c for 98 to 99 per cent and 99 per cent virgin ingot.

Mill Products

Base prices cents per pound, f.o.b. mill

SHEETS	
Copper, hot rolled, 4 oz., min..	21.25
High brass	17.75
Zinc, ga. 9 to 18 (plates ½c less)	9.75
Lead, full sheets (cut ¼c more).	12.00
Aluminum, bright, 0 to 35 gage..	37.50 to 92.00
SEAMLESS TUBES	
High brass	21.50
Copper	22.75
RODS	
High brass, round, ⅜ to 2½-inch	15.50
Naval brass rods	18.25
WIRE	
Copper	15.50 to 16.00
High brass	18.25

Old Metals

Dealers' buying prices cents per pound

HEAVY RED BRASS	
Cleveland	9.25 to 9.50
New York	8.75 to 9.00
Chicago	9.00
HEAVY YELLOW BRASS	
New York	6.00 to 6.25
Chicago	6.75
Cleveland	6.25 to 6.50
ZINC	
New York	4.00 to 4.25
Cleveland	3.75 to 4.00
Chicago, dross	4.50
HEAVY COPPER AND WIRE	
Cleveland	10.50 to 11.00
New York	10.25 to 10.50
Chicago	10.50 to 11.00
RED BRASS TURNINGS	
New York	8.00 to 8.25
Cleveland	8.50
Chicago	8.50
YELLOW BRASS TUBING	
Cleveland	6.50
NO. 1 BRASS ROD TURNINGS	
Cleveland	6.25 to 6.75
New York	6.75 to 7.00
Chicago	6.75
ALUMINUM BORINGS	
Cleveland	12.50

Sulphate Lower

Domestic and Export Markets Dull—Light Oil Distillates Steady

New York, April 15.—Another reduction has been made in the price of sulphate of ammonia. Sellers are quoting $2.60 to $2.65, works on domestic business, and $2.55 to $2.60, port, on exports. The weakness is a result of continued dullness and there are few indications of an immediate improvement. Foreign inquiry is virtually at a standstill, and on such business as might arise competition from European sellers would be keen.

Little domestic business is likely to develop until the fertilizer manufacturers come into the market for their long term contracts, usually late in May or early in June. The fertilizer market, however, has been in an unsettled state. Sharp competition among fertilizer manufacturers forced their prices below the level at which many of them were able to produce it. They probably will be cautious in contracting.

The situation in light oil distillates is unchanged, with prices steady. Pure benzol is holding at 25 cents works in tanks and 30 cents in drums; 90 per cent, 23 cents in tanks and 28 cents in drums; xylol, 28 cents works in tanks and 33 cents in drums; toluol, 26 cents in tanks and 30 cents in drums; solvent naphtha, 25 cents in tanks and 30 cents in drums.

Although naphthalene is unchanged at 6 cents works, for flakes and 7 cents for balls, the tendency is slightly upward. This is due to better activity on the part of the drug interests who are closing on requirements for the cleaning season. Phenol may be quoted at 28 cents works, on contracts and around 38 cents, storage, on spot business.

Coke Oven By-Products

	Spot*
Per Gallon at Producers' Plants in Tank Lots	
Pure benzol	$0.25
Toluol	0.26
Solvent naphtha	0.25
Commercial xylol	0.28
Per Pound at Producers' Plants	
Phenol	0.38
Naphthalene flake	0.06
Naphthalene balls	0.07
Per 100 Pounds at Producers' Plants	
Sulphate of ammonia	$2.60 to $2.65
Contract	
Pure benzol	Nominal
Toluol	Nominal
Solvent naphtha	Nominal
Commercial xylol	Nominal
Per Pound at Producers' Plants	
Phenol	$0.28
Naphthalene flakes	0.06
Naphthalene balls	0.07

*Spot distillates are subject to shading.

New Mill Completed

St. Louis, April 14.—According to L. E. Fischer, president of the Missouri Rolling Mill Corp., the new plant of that corporation, occupying six acres in the southwestern industrial district, will be completed and in operation about May 1. The plant will produce reinforcing bars and shapes by rolling old rails. It is estimated that it will turn out about 50,000 tons of such materials yearly.

Final work is being done on the warehouse, designed to carry a large stock of material. This building is 85 feet wide and 210 feet long. The main building, which is completed, is equipped throughout with electric motors, an oil-fired continuous furnace, three oil-fired hand furnaces and other modern facilities. The company is incorporated under the laws of Missouri with a capital of $785,000.

The American Bosch Magneto Corp., Springfield, Mass., shows net profit for the year ended Dec. 31, 1923 of $94,075. This compares with net in 1922 of $2332.

Northwest Fairly Active

Some Records for March Less Than 1923 but Others Maintain Level —New Utah Blast Furnace About To Start

SEATTLE, April 9.—While distributing interests and wholesalers report some recession in business, attributed to curtailment in the logging and lumber industries in Washington and Oregon, the condition is not widespread. Some of the larger jobbers state increased demand for new construction and repair materials has more than offset dullness in the lumber trade.

The Great Western Power Co., San Francisco, is planning to complete construction work in 1924 at a cost of more than $4,000,000.

The trade is closely watching developments in the award of contracts for three Portland bridges costing $4,800,000. Unsuccessful bidders have threatened to bring an injunction to prevent the awards at first announced and the matter is still unsettled.

Pig Iron and Coke

While the British market is a trifle softer exchange has strengthened so that prices here are unchanged, the best grades being quoted at $33.50. The feature of the coast situation is the coming into blast in two or three weeks of the new furnaces at Provo, Utah. This iron is a fairly good grade and with an output of 80,000 to 100,000 tons per annum the Provo plant is expected to enter actively into competition in all the western territory. It is believed that it will find its way into Oregon and Washington where heretofore British iron has been used by the industry. Balfour, Guthrie & Co. have been named Pacific coast agents for the Provo furnaces. Some Korean pig iron is offering on this coast but quotations are based on lots of 500 to 1000 tons. Some time ago a sample lot of less than 100 tons was brought in but it has not aroused much interest, especially as it is not obtainable on a competitive basis in small parcels.

Bars, Plates and Shapes

The Pacific Coast Steel Co. reports the market firm at an unchanged price of 2.85c. Business is fairly steady, tonnages being mostly in small lots. Reinforcing orders continue in good volume and the local mill shows the same operation. There is no export inquiry from the Orient, although the normal amount of business is coming from the Hawaiian Islands. Contract for 760 tons of reinforcing steel for the Medical building, Seattle, is pending. Bids are now being considered for 500 tons of steel for the Stimson building, Seattle. Bids were opened at Los Angeles April 7 for 575 tons reinforcing steel for a proposed drainage system. Some foreign bars of Belgian origin, are being offered in this district but as far as known no orders have been placed. The contract awarded Wallace Equipment Co., Seattle, for the dredger hull at Portland, involves 500 tons of plates and 285 tons of shapes.

Lower prices on plates have been offered in this section, one interest receiving a figure of 2.70c c.i.f. but this quotation was confined to 3/16-inch and smaller sizes, no cut having been made in the larger specifications. The general quotation on the ordinary run ranges from 2.75c to 2.85c.

German plates are being quoted at 2.15c c.i.f. duty paid for universal.

General prices on shapes are 2.80c c.i.f. for the larger lots, more desirable business being placed at 2.75c. The Moore Dry Dock Co., San Francisco, was the low bidder for 800 tons for the Hart building, Sacramento.

Finished Materials

Prices of bolts, nuts and small rivets in this territory have declined slightly this week, one interest naming a price of 70 off on large machine bolts.

The demand for cast iron pipe from municipalities in this section has not been heavy. Only one award of any size has been reported, involving 5050 tons by Portland to the United States Cast Iron Pipe & Foundry Co. Pending business on this coast exceeds 9000 tons, the largest of which, 7361 tons, is for Santa Monica, Cal. The general contract for this project went to Claude Fisher but the pipe award has not yet been placed. General pipe specifications for building purposes are moving actively.

Wholesale jobbers generally report satisfactory business. Prices are unchanged, the market showing no features.

There is some activity in steel rails. Bloedel-Donovan lumber mills, Seattle, which will build a logging railroad in the Olympic peninsula, are reported to have placed an order for 2500 tons of 70-pound rails with a local importing interest. The purchase is expected to be made in Germany.

Bids to be opened by Seattle this week call for 600 tons of 7-inch 80-pound T rails for the street railway. A lot of 100 tons of steel rails from England, the largest single shipment to come here in several months, is due by steamer next week. This order is understood to be for operators of logging railroads.

Old Materials

Conditions are about the same as last week. Buyers are paying $10 to $10.50 gross for scrap steel, with the best grades bringing about $11. Supplies are ample for the demand. No. 1 cast iron is being quoted at $18, but there is neither much on hand nor more than a nominal demand. Buying of cheap grades of continental pig iron has reduced interest in cast scrap sufficiently.

Large dealers in scrap are interested in the opening of bids in London, England, April 16 for approximately 32,000 tons of railroad equipment which has been lying at Vancouver, B. C. for seven or eight years. This material consists of wheels, trucks, bodies, springs, bolts, locomotives, of special sizes and designs, intended for steam roads in Russia. It was ordered during the war but owing to conditions in Russia was not shipped. It now belongs to the British War Mission which is asking tenders. Not being of standard size it is useless except as scrap. As it is held under export bills of lading it will be impracticable to sell the material here and it is expected the successful bidder will arrange for exporting it as scrap.

Scrap Down $1 More

(*Conculded from Page* 1020)

past week have been inconsequential, a few grades sliding off slightly.

Buffalo Demand Light

Buffalo, April 15.—The only activity in the scrap market is in No. 1 machinery cast and malleable. Some Canadian demand, supplemented by Buffalo foundry demand, exists for these two commodities. For cast, $18.25 to $19 has been paid and for malleable $19 to $19.50. Trading in heavy melting steel is almost at a standstill, except for minor transactions. One mill continues to suspend shipments, and open-hearth operation is somewhat reduced.

Apathy at St. Louis

St. Louis, April 14.—The market for iron and steel scrap continues downward. Consumers are buying little and interchanges between dealers which had constituted the chief activity, have subsided as nearly all open contracts are filled. Outside inquiry has disappeared and advices from other points indicate quiet. Mills and foundries find their stocks of raw materials will stretch further than they had anticipated.

Stocks in dealers' hands are liberal and recent large shipments by railroads have resulted in some congestion. Little country scrap has come in, and recent declines have served to stop offerings by country dealers. All grades are affected by weakness but cast grades and some steel specialties wanted by an East side melter are holding better than the rest of the list.

Despite the decline, railroads continue to offer much scrap, including the following: Wabash, 3950 tons; Texas & Pacific, 250 tons; Northern Pacific, 1800 tons; Missouri, Kansas & Texas, 3400 tons, including 500 tons of mixed; Illinois Central, 6000 tons; Kansas City Southern, 1000 tons and Louisville & Nashville, 12,000 tons. The Standard Oil Co. is offering 75 tons of pipe here.

No Demand in South

Birmingham, Ala., April 14.—With the exception of some stove plate and No. 1 cast, little iron and steel scrap is moving. Some contracts will run over another 30 to 60 days, consumers deferring delivery. Quotations have changed little in the past few weeks. Heavy melting steel is listless. Gulf States Steel Co., not buying liberally. This consumer has three open hearth furnaces in operation. Larger dealers are carrying good stocks.

Final Pittsburgh Plus Arguments June 23

Washington, April 15.—While numerous reports have appeared in iron and steel market centers in the last few weeks that the report of J. W. Bennett, examiner for the federal trade commission, recommends a cease and desist order against the United States Steel Corp. in the complaint against the Pittsburgh plus method of basing steel prices, the commission has given out nothing concerning the report nor will it do so until the actual findings of the commission are completed which will not be for several months. In the meantime the commission is going ahead preparing to receive the briefs and arguments from counsel from opposing sides before it makes its final findings.

According to procedure of the commission, the examiner's reports on hearings which have been completed are kept secret as far as its relations with the general public are concerned. In accordance with the commission's procedure, the examiner's report in the basing point case has been filed with the respondent company and trade associations officially interested in the complaint.

The method of handling cases by the commission differs from that of some inquisitorial and semi-inquisitorial bodies, such as the interstate commerce commission, in that the examiners' reports on cases are not made public. The federal trade commission takes the position that it is a complaining party and therefore its functions are of a different nature than those of some other commissions.

Examiner Bennett's report was filed several weeks ago with the commission, the respondent company and others. No doubt this report gives lengthy consideration of the interpretation of the sections of the Clayton and federal trade commission acts under which the complaint was issued. While no announcement as to the recommendations of the examiner have been made public by Steel corporation attorneys, the report has fallen into many hands by this time and has given rise to rumors that a cease and desist order finally will be decided upon by the trade commission.

The brief for the trade commission must be filed by the commission's counsel not later than May 22, and the Steel corporation's brief must be filed by June 9. Intervening interests also may file briefs and exceptions likely will be filed subsequently. Final argument for counsel in the case has been set for June 23.

An involuntary petition is bankruptcy was filed April 4 against the Drophead Projector Co., Fond du Lac, Wis., which has been in the hands of a creditors committee since Dec. 20. Portable motion picture machines were being manufactured.

Sheet Sales Increased During March

An increase in sales, production and shipments is reported for March business by the National Association of Sheet & Tin Plate Manufacturers. A comparison of the March figures with those for February, giving the percentages that the tonnages bear to capacity for the respective months follows:

	Net tons, March, 1924	Per cent of capacity	Net tons, Feb., 1924	Per cent of capacity
Sales	251,411	87.0	189,081	96.3
Production	278,767	96.5	275,118	96.5
Shipments	262,497	90.9	249,859	87.6
Unfilled tonnage, April 1 and March 1	422,889	146.3	434,145	152.3
Stock awaiting shipment first of following month	82,549	28.4	82,362	28.9
In stock unsold first of following month	43,888	15.1	30,658	10.7

The total number of hot mills in the United States is 679, having a capacity for March of 398,000 tons, and the percentage of capacity to which the March figures pertain is 72.6. The capacity for February was 392,000 tons, and the percentage of capacity to which the February figures related was 72.7 per cent. Following is a comparison of sales, production and shipments of sales, proas reported to the association during the past 15 months:

	Sales	Production	Shipments
Mar.	251,411	278,767	262,497
Feb.	189,081	275,118	249,859
Jan., 1924	234,858	274,097	228,660
Dec.	349,446	155,229	188,600
Nov.	165,491	188,144	199,836
Oct.	185,110	225,714	230,820
Sept.	223,556	185,577	205,772
Aug.	116,659	234,112	234,486
July	92,358	174,910	192,261
June	172,637	218,432	233,128
May	242,624	260,006	278,059
April	183,904	254,808	253,563
March	325,526	279,475	287,203
Feb., 1923	253,197	237,919	217,808

Gary Sees Great Future for South America

New York, April 15.—E. H. Gary, chairman of the United States Steel Corp., who returned yesterday from a visit to South American countries said those countries have a great future, but their development will be slow as capital is needed to develop their resources. He believes business relations between South and North America are not as friendly as they should be, "possibly our fault." He visited the corporation's manganese mines at LaFayette, Brazil, the largest in South America.

Castings Output Largest Since March 1923

Washington, April 15.—Operations of manufacturers of steel castings in March were at the rate of 101.1 per cent of capacity, the greatest activity reached since March, 1923, according to the department of commerce. Bookings in the month just ended were 97,962 tons as compared with 70,829 tons in February and a monthly average in 1923 of 72,335 tons. The sudden increase was due largely to the activity of the railroads, 59,141 tons of railway specialties being booked last month. This was at the rate of 154.4 per cent of shop capacity. Following is the comparison of bookings since January, 1923:

1923	Total net tons	Per cent capacity	Railway specialties net tons	Miscellaneous net tons
Jan.	100,605	103.8	47,879	52,726
Feb.	90,152	93.0	39,845	50,307
Mar.	143,564	148.2	76,409	67,155
April	90,968	93.9	39,610	51,358
May	89,493	92.4	38,788	50,705
June	84,878	87.6	42,773	42,105
July*	52,066	53.7	16,741	35,325
Aug.	**50,463	52.1	18,332	**32,131
Sept.	**47,476	49.1	21,685	**25,791
Oct.	**37,312	38.6	9,840	**27,472
Nov.	**39,572	40.9	12,916	**26,656
Dec.	**41,014	42.4	15,182	**25,832
1923 totals	867,563	...	380,000	487,563
Mo. av...	72,335	74.6	31,667	40,668
1924				
Jan.	49,164	50.7	18,970	30,194
Feb.	70,829	73.1	34,901	35,928
Mar.	97,962	101.1	59,141	38,821

*Two companies with a capacity of 785 tons per month on miscellaneous castings now out of business.

**Revised.

Australia Places Tanks; Other Export Sales

New York, April 15.—The Riter-Conley Co. has booked an order from Australia for gas tanks involving 1800 tons of plates. The Imperial Government Railways of Japan are inquiring for 750 tons of galvanized wire on which bids will be opened April 19. No action yet has been taken on the rails for the Keihin tramway or rails for the island of Formosa.

There has been considerable confusion with respect to prices on sheets for Japan during the past week as a result of cables from Japan. These cables stated that 31-gage, 13 sheets to the bundle, $91 to $93 c.i.f. Kobe had been quoted, but as far as can be learned, the minimum price American makers have named on these sheets is $96. Japan has an inquiry in the market for 2400 tons of sheets.

It now is considered unlikely that any business will materialize from the inquiry for 28,000 to 30,000 tons of galvanized sheets for the Argentine Republic. There is a new inquiry, however, for a considerable tonnage of galvanized sheets for windmill blades for Argentine.

Dawes Plan Helpful to Trade

European Business Morale Improved, Though It Is Believed an Agreement Is Far Off—British Labor Government Modifies Protection Clauses, Indicating Repeal of Duties on American Tools and Other Products

Iron Trade Review Staff Cable

European Headquarters,
IRON TRADE REVIEW,
2-3 Caxton House, Westminster, S. W.1

LONDON, April 15.—The report of the Dawes committee has been received favorably and this is having a beneficial effect on European business sentiment, although it is generally believed that an agreement on the German reparations problem is far off.

The British labor government, supported by the Liberals, has announced that the antidumping and depreciated exchange protection clauses in the safeguarding of industries act will terminate Aug. 19. This is believed to foreshadow the repeal of the safeguarding duties on American automobiles, tools and other commodities.

Pig iron production in Great Britain in March totaled 669,000 tons, compared with 610,000 tons in February, 630,000 tons in January and a monthly average of 619,775 tons in 1923. At the end of March 194 stacks were in operation, one less than at the close of February. British production of steel in March totaled 825,000 tons, compared with 750,000 tons in February, 680,000 tons in January, and a monthly average of 706,166 tons in 1923.

Exports of British iron and steel in March amounted to 288,000 tons, against 331,000 tons in February, 338,000 tons in January and a monthly average of 355,000 tons in 1923. British imports of iron and steel products in March totaled 165,000 tons, compared with 190,000 tons in February, 140,000 tons in January and a monthly average of 111,600 tons in 1923.

Prices of French and Belgian material are being revised downward, but are unattractive to foreign buyers. An indication of the trend is to be noted in the fact that British pig iron has been sold for delivery to the Continent.

The agreement between the French government and the German industrialists in the Ruhr has been extended to June 15.

British Trade Freed of Belgian Competition

European Staff Special

BIRMINGHAM, Eng., April 4.—The pig iron market has recovered sufficiently to prevent further putting out of furnaces in the Middlesbrough area. Some inroads have been made into stocks and prices have advanced a little, Cleveland No. 3 realizing in some cases as much as £4 12s 6d ($19.89). The returns of March exports, show some restoration of business with the Continent, which is no longer a seller of pig iron to this country and a continuance of fair business with America, which was Middlesbrough's second largest customer. Hematite pig iron is somewhat firmer at recent rates, and the slump has been checked.

Unfortunately, Barrow does not share in the improvement, two furnaces having been extinguished there, largely because of the stoppage of the principal mills at the steelworks in Barrow and Workington. Overseas business has almost collapsed as far as that area is concerned, and the number of furnaces at work is reduced to 10 as compared with the normal 24. Prices of low phosphorus material have receded a little. Uncertainty as to the coal position discourages forward buying.

Sterling—$4.30

The tone at the Birmingham quarterly meeting this week was better than a fortnight ago appeared possible. The meeting was encouraged by an advance in best finished iron of 10s ($2.15) per ton, making the new basis £15 ($64.50).

In steel mixed conditions prevail. Middlesbrough exports of steel show a decided reduction, from 52,663 in February to 33,069 tons in March. Reductions are recorded in most of the imperial markets, an exception being the shipments to Australia and New Zealand which are slightly better; South America also taking 4493 tons against 2228 tons in February.

British billets are at a minimum of £8 ($34.40) with some firms asking up to £8 15s ($37.62). One of the busiest areas is Sheffield which has a large share of railway work, especially in tires and axles, and there is a good

European Steel Delivered to World Ports

Gross Tons—Prices Last Reported

	U. S. A. North Atlantic Ports	U. S. A. Pacific Ports and Vancouver	Buenos Aires, Rio de Janiero, East Coast of South America	Valparaiso, West Coast of South America	Calcutta, Bombay and Indian Ports	Singapore and Straits Ports	South African, Australian, New Zealand Ports	Hongkong South China	Shanghai and North China	Japanese Ports
*Foundry No. 3 Pig Iron, Si. 2.50-3.00	$22.45	$24.00	$25.00	$26.00	$24.20	$27.60	$28.20	$28.20	$28.75	$28.20
*Hematite Pig Iron, Phos. 0.02-0.05	24.00	25.40	26.40	27.50	25.90	29.00	29.60	29.60	30.15	29.60
Standard rails	37.50	38.75	38.75	40.00	37.00	41.30	42.00	42.00	42.55	42.55
Merchant bars	1.65c	1.70c	1.68c	1.73c	1.61c	1.80c	1.82c	1.82c	1.84c	1.82c
Structural shapes	1.56c	1.61c	1.59c	1.64c	1.52c	1.71c	1.73c	1.73c	1.75c	1.73c
Plates, ship, bridge and tank	1.85c	1.90c	1.87c	1.92c	1.80c	1.99c	2.01c	2.01c	2.03c	2.01c
†Sheets, black, 24 gage	2.85c	2.90c	2.98c	2.93c	2.81c	2.95c	2.98c	2.98c	3.00c	2.98c
†Sheets, galvanized, 24 gage corr.	3.72c	3.77c	3.84c	3.80c	3.68c	3.82c	3.84c	3.84c	3.86c	3.84c
Plain wire, base	2.75c	2.80c	2.78c	2.83c	2.71c	2.90c	2.92c	2.92c	2.94c	2.92c
Galvanized wire, base	2.95c	3.00c	2.98c	3.03c	2.91c	3.10c	3.12c	3.12c	3.14c	3.12c
Wire nails, base	3.19c	3.24c	3.22c	3.27c	3.14c	3.33c	3.36c	3.36c	3.38c	3.36c
†Tin plate, base box	5.55c	5.60c	5.80c	5.85c	5.50c	5.70c	5.75c	5.75c	5.77c	5.75c

The foregoing prices are for delivery by cargo liners in ordinary quantities 100 to 1000 tons, c.i.f. to port of destination, but *without* customs duties, unloading charges, dock dues, commissions, etc., at destination. Owing to lack of uniformity in ocean freight rates, cargo shipments by tramp steamers may show considerable variation from these quotations. Pig iron and rails quoted dollars per ton, finished steel in cents per pound, tin plate in dollars per box. Quotations are for *Continental* iron and basic-bessemer steel, except as indicated; for British material add $4.50 to $6.00 per ton.

Continental material except as indicated. †British material, basic open-hearth. *British, Middlesbrough.

Current Iron and Steel Prices of Europe

Last Reported Prices Converted into Dollars at Rates of Exchange, April 14

Export Prices f. o. b. Ship at Port of Despatch

Corrected to Date by Cable

	British Gross Tons f. o. b. U. K. Ports	£ s d	*French* Metric Tons f. o. b. Channel Ports	French Francs	*Belgian and Luxemburg* Metric Tons f. o. b. Channel Ports	Belgian Francs	*German* Metric Tons f. o. b. Rotterdam or North Sea Ports	£ s d
PIG IRON								
Foundry No. 3, Silicon 2.50-3.00	$20.66	4 15 0	$24.58	400	$25.73	470	$19.79	4 11 0
Basic	20.66	4 15 0	25.81	420	26.28	480	19.79	4 11 0
Basic-bessemer	21.75	5 0 0†	25.19	410	25.73	470	21.97	5 1 0
Hematite, Phosphorus 0.02-0.05	21.32	4 18 0	30.73	500	....	....	22.40	5 3 0
SEMIFINISHED STEEL								
Billets	$33.71	7 15 0	$32.26	525	$31.48	575	$30.45	7 0 0
Wire rods	47.85	11 0 0	43.02	700	46.54	850	41.27	9 9 0
FINISHED STEEL								
Standard rails	$36.98	8 10 0	$36.87	600	$35.59	650	$33.71	7 15 0
Merchant bars	1.70c	8 15 0	2.81c	650	1.68c	675	1.56c	7 18 0
Structural shapes	1.63c	8 7 6	1.67c	600	1.61c	650	1.48c	7 10 0
Plates, ship, bridge and tank	1.75c	9 0 0	2.01c	720	1.92c	775	1.54c	8 5 0
Sheets, black, 24 gage	2.62c	13 0 0	3.34c	1,200	2.98c	1,200	2.07c	10 10 0
Sheets, galvanized, 24 gage, corrugated	3.45c	17 15 0	4.60c	1,650	4.47c	1,800	3.46c	18 0 0
Bands and strips	2.14c	11 0 0	2.51c	900	2.61c	1,050	1.85c	9 10 0
Plain wire, base	2.72c	14 0 0	....	....	2.98c	1,200	2.37c	12 0 0
Galvanized wire, base	3.30c	17 0 0	....	....	3.60c	1,450	2.95c	15 0 0
Wire nails, base	2.82c	14 10 0	....	....	3.10c	1,250	2.95c	15 0 0
Tin plate, base box 108 pounds	$5.33	1 4 6	....	....	....	....	$6.31	1 9 0

Domestic Prices at Works or Furnace

Prices Last Reported

						Renten Marks
Foundry No. 3 Pig Iron, Silicon 2.50-3.00	$19.79	4 11 0	$25.19	410(2)	$26.55	485	$20.02	91
Basic pig iron	20.66	4 15 0	25.19	410(1)	25.73	470	20.90	95
Furnace coke	5.22	1 4 0	8.73	142	10.68	195	7.04	32
Billets	32.63	7 10 0	40.56	660	39.15	715	28.60	130
Standard Rails	1.75c	9 0 0	1.73c	620	1.73c	695	1.46c	147
Merchant Bars	1.75c	9 0 0	2.09c	750	1.92c	775	1.45c	145
Shapes	1.85c	9 10 0	1.98c	710	1.89c	760	1.42c	142
Plates, ship, bridge and tank	1.85c	9 10 0	2.23c	800	2.17c	875	1.60c	160
Sheets, black, 24 gage	2.62c	13 10 0	2.42c	870	2.26c	910	1.45c	195
Sheets, galvanized 24 gage, corrugated	3.50c	18 0 0	4.74c	1700	5.28c	2125	3.39c	340
Plain wire	2.72c	14 0 0	3.34c	1200	3.48c	1400	1.54c	200
Bands and Strips	2.33c	12 0 0	3.07c	1190	3.23c	1300	1.85c	185

*Scotch foundry iron; †Middlesbrough; (1) Basic-bessemer; (2) Longwy. British export furnace coke £1 6s 0d ($5.66) f.o.b. Ferromanganese, £17 0s 0d ($73.95) f.o.b. The equivalent prices in American currency are in dollars per ton for pig iron, coke, semifinished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel; French, Belgian, Luxemburg, and German are for basic-bessemer steel.

demand for cold-rolled strip and other material for various motor building and engineering requirements.

An important step has been taken by the London Midland & Scottish railway whose heavy contracts have contributed largely to the revival. This firm is inserting a clause in its new contracts intimating that only British material will be accepted. This will be a setback to rerollers who have made very large use of semifinished steel from Belgium.

The position with regard to foreign competition has changed. The quarterly meeting in Birmingham contrasted with its predecessor in respect to the very small foreign attendance. Three months ago the Belgians were offering steel at prices which, if quantities had been sufficient, would have threatened the English steel trade with extinction. There were practically no foreigners present on this occasion. Since the recovery of the franc, numerous Belgian quotations have been withdrawn, and it is rare to get offers of any kind of material. The minimum quotation for billets is £7 5s ($31.17). But this is an isolated example.

The galvanized sheet trade is making a large output with new business on a rather lower scale. The price minimum has fallen to £17 15s ($76.32) partly as the result of this quieter demand. It is well known the sheet trade budgeted for a big Japanese demand which has not been realized. The trade, however, is not badly off, and can run comfortably until midsummer on the scale of the present moderate bookings.

In the tin plate trade Swansea shipments have reached record proportions, last week's totals being 232,041 boxes, a rise of about 50,000 over the previous week. The clearing up of arrears following the strike is partly responsible for these big figures, though they reflect the unusual scale of production. Buying is quiet now, apparently because the consumer regards tin prices as somewhat inflated, and is disposed to wait for a reaction. The Tinned Sheet Manufacturers' association reaffirms prices as follows: for 20 gage tinned sheet £60 ($258.00) per ton for best charcoal; £58 ($249.40) for charcoal and £54 ($232.20) for unassorted grades. Lead coated sheets remain at £28 ($120.40) for 20 gage.

The project for a general selling agency for the tin plate trade has materialized this week, by the registration as a private company of the South Wales Tinplate Corp., Ltd. with a nominal capital of £700,000 in £10 shares. It will act for about 15 firms, including the large Richard Thomas & Grovesend combine, and in addition to dealing with tin plate and galvanized sheets the articles of association provide for the handling of labor disputes, wages settlements, legislative reform, etc.

Steel scrap is slightly firmer at £4 15s ($20.42). Consumers are more disposed to place their orders and in some cases their stocks are approaching exhaustion.

Ocean Freights Higher

London, April 1.—With the decreased buying of European iron and steel in America owing to the rise in prices on the Continent and the improvement in French and Belgian exchange, there is less activity in ocean freight markets, but a good many parcels already contracted for are coming up for shipment. Freight rates have hardened to some extent. A shipment of finished steel to the Gulf was recently fixed at 18s 0d ($3.87) per gross ton, while £1 0s 0d ($4.30) was quoted to San Francisco. On an inquiry for 500 tons of pig iron for shipment to Seattle 18s 0d

($3.87) was developed. Generally speaking recent purchases of finished steel on the Atlantic coast are moving from Antwerp to Philadelphia and New York, at 16s 0d to 20s 0d ($3.44 to $4.30) per ton. Pig iron is going at lower figures, about 13s 0d ($28.80) to Philadelphia and Boston.

Two American steamers were chartered this week to carry iron ore from Bizerta to Philadelphia at 7s 0d ($1.50) per ton, full terms. Vessels also have been chartered recently to carry manganese ore from Poti on the Black Sea to American Atlantic ports at $4 per ton.

Rates on finished steel from European ports to the east coast of South America are about £1 0s 0d ($4.30) per ton. From European ports to the Far East, such as Hongkong, Shanghai or Kobe, the rate on finished steel is still about £2 0s 0d ($8.60) per ton. Approximately the same rates prevail for Australia and about half this figure is being charged for shipments to India.

Imported Steel Gluts Japanese Ports

Foreign Special Service

TOKIO, Japan, March 15.—Although the Japanese government has decided, as result of conference with the governor of the Bank of Japan and the president of the Yokohama Specie bank, to prevent dumping by giving freer credit through those and other semiofficial banks while stopping all speculation in exchange, the iron and steel trade is skeptical as to results.

The load of imported articles under which the trade is laboring is too heavy. As the customs service refrains from publishing full monthly returns the exact amount of importations since the quake can not be ascertained, but their value to the close of February is placed at 75,592,000 yen for iron and steel bars, rods, sheets, plates and pipes, 6,818,000 yen for nails, 2,438,000 yen for sundry iron and steel products for structural purposes, 1,146,000 yen for stoves, 700,000 yen for house fixtures and 5,783,000 yen for rails. Most of these importations is still in the hands of importers and merchants.

Besides a heavy tonnage of iron and steel products and shapes, which is in customs sheds at Yokohama, Kobe, Osaka and other trading ports. Exclusive of government importations that idle tonnage is estimated at something like 180,000 tons. At Yokohama more than 80,000 tons are reported. Import merchants do not claim the stocks thus warehoused at quays because buyers, financially distressed, will not pay for them.

Yen—$0.415

Dumping is maintained in spite of the government decision and the price is forced down almost every day. Prevalent quotations in Tokio are far below the original cost but show hardly a sign of steadying. The government steel works at Yawata which have stood firm thus far is forced accordingly to revise its price list and reduce forward prices by 2 yen to 20 yen per ton.

In the pig iron market No. 1 Japanese is quoted at 64 yen ($26.56) per ton, No. 2 and No. 3 being quoted at 61 yen and 59 yen ($25.31 and $28.98) respectively. No. 1 Hanyang is quoted at 63 yen ($26.14) per ton. Bengal is quoted at 61 yen ($25.31) per ton. Cleveland is nominally quoted at 78 yen ($32.37) per ton. In the steel market round bars have come down to 4.15 yen ($1.72) per 10 kwamme. Flat bars have come down to 4.60 yen ($1.90) per 10 kwamme. Square bars are quoted at 4.70 yen ($1.95) per 10 kwamme. Plates stay on at 4.50 yen ($1.86) per 10 kwamme.

Today's exchange rate is: Yen to 47½ cents (official rate). The open yen-dollar rate is 41½ cents. Kwamme equals 8.2673 pounds.

German Exports Below Previous Years

Berlin, March 24.—According to official statistics recently compiled Germany's exports of iron and steel during 1923 were 1,737,270 metric tons, compared with 2,628,240 metric tons in 1922, 2,145,000 tons in 1921, 1,750,601 tons in 1920, and 5,755,000 tons in 1913. The considerable decrease in German exports during 1923 is of course due to to the occupation of the Ruhr. The exports for March to July were more than 50,000 tons less each month than for the corresponding month of the previous year. There was an improvement toward the end of the year, October showing an increase of 3483 tons over the preceding month, November an increase of 1000 tons over October, and December an increase of 12,015 tons above November. Shipments in December were the highest since May.

Imports in 1923 were 1,933,262 metric tons, compared with 2,432,993 tons in 1922, 632,000 tons in 1921, 419,406 tons in 1920, and 289,006 tons in 1913. Imports for 1923 were 499,731 tons less than in 1922, which registered the heaviest total in German history. Imports in December were 104,701 metric tons compared with 143,068 tons in November. December was the lowest since March.

German Exports of Iron and Steel, 1923

IN METRIC TONS OF 2205 POUNDS

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Pig iron, ferro alloys and scrap	39,080	46,061	30,658	39,336	45,651	45,057	53,791	29,889	37,405	38,583	36,875	31,057
Cast iron pipe	4,036	4,797	3,391	3,350	1,967	1,932	2,077	4,032	1,648	2,904	3,705	2,652
Rolls	694	1,013	650	305	351	729	827	823	805	796	1,485	658
Cast machine parts	148	73	94	238	104	48	107	44	84	51	70	141
Other castings	9,671	6,709	5,597	7,252	7,903	4,835	6,381	6,755	6,439	7,650	7,482	6,724
Blooms, billets, sheet bars	13,256	8,106	13,610	11,583	10,077	4,805	11,114	13,482	2,450	468	62	601
Bars and bands	41,556	33,240	11,568	20,401	15,215	9,575	6,615	9,057	6,564	9,523	12,418	22,193
Plates and sheets	30,745	20,834	15,663	19,017	7,284	6,630	8,137	15,488	7,635	10,118	11,345	14,278
Tinplate and galvanized sheets	1,954	2,588	2,004	1,968	697	1,151	1,189	1,558	1,397	1,595	1,368	1,841
Wire, rolled and drawn	17,567	18,996	11,052	4,180	4,868	3,514	5,927	10,888	15,556	9,776	9,638	10,593
Pipe	8,794	10,589	3,672	1,964	4,710	1,905	2,196	4,412	2,816	4,202	2,435	5,172
Rails and track fastenings	18,257	14,263	8,498	2,736	6,771	1,014	892	1,388	984	983	1,452	3,099
Wheels and tires	4,443	3,088	800	774	638	72	1,075	2,220	1,434	2,563	383	825
Forgings	8,661	8,734	5,822	6,575	6,963	5,326	6,044	7,080	6,058	2,826	7,640	6,664
Bridge and structural steel	3,176	2,185	1,668	596	832	599	854	1,278	1,185	871	634	2,512
Boilers	2,296	2,009	2,041	1,254	693	890	1,014	992	1,273	955	1,804	1,444
Anchors, hammers, etc	480	315	411	300	240	397	312	388	287	397	340	428
Agricultural implements	2,565	2,595	3,024	2,276	1,996	1,989	1,989	2,147	1,792	1,904	1,973	1,691
Tools	3,287	3,328	2,755	2,545	2,323	2,197	2,445	2,297	2,163	2,232	2,389	2,383
Screws, bolts, nuts, etc	1,487	1,074	1,055	1,183	936	925	974	861	1,026	1,197	1,281	1,295
Axles	320	187	210	185	224	184	177	97	119	104	143	129
Railway and auto springs	541	343	256	283	332	356	494	206	878	741	268	294
Wire rope	983	979	1,096	680	451	150	1,113	946	703	802	624	649
Other wire products	6,456	3,978	3,878	1,983	3,059	2,138	3,440	4,013	4,324	3,775	3,341	3,765
Wire nails	6,860	5,302	5,896	3,782	3,449	3,301	4,609	5,537	5,757	5,018	5,244	5,255
House hardware	2,532	2,466	2,754	2,656	2,117	2,568	2,328	2,294	2,483	2,939	2,737	2,761
Chain	639	598	523	633	676	500	802	496	386	535	444	507
Miscellaneous	6,235	5,515	5,207	5,178	5,078	4,358	4,947	4,121	4,271	4,432	4,816	4,800
Totals	236,709	209,965	143,853	143,212	135,605	107,151	131,870	132,789	117,913	121,396	122,396	134,411

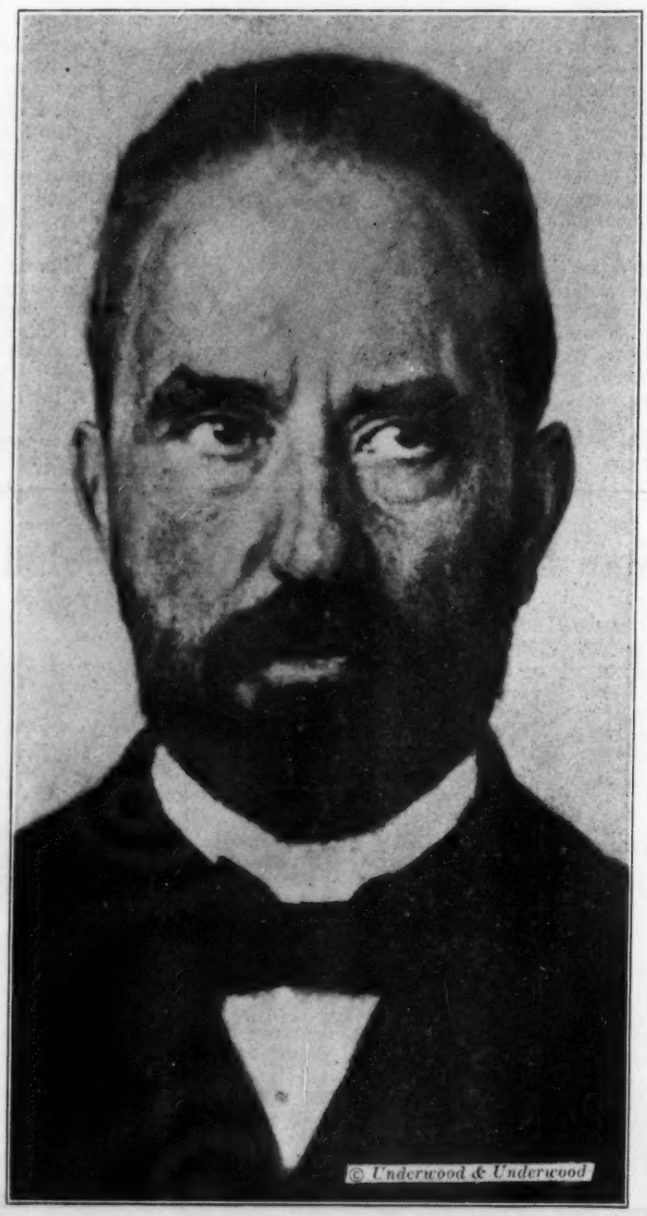
GRAND TOTAL for 1923: 1,737,270 tons.

Stinnes, Industrial Leader

Death of Germany's Trust Builder Closes Career of Greatest of Present Day Continental Steelmasters

HUGO STINNES, who died in Berlin April 10, was the most powerful figure in Germany and one of the greatest of continental steelmasters. He was born 54 years ago and at the age of 18 began work as a miner. Previous to his work in the mines he served as an apprentice to the organization of Karl Spalter in Coblenz. He gained a practical knowledge of mining while working in the mines and then took up the study of mining engineering at a technical school.

At the age of 20 Stinnes became a partner in the coal mining and shipping business of his grandfather, Mathias Stinnes, Mulheim on the Ruhr. In 1893 he established a company of his own for dealing in fuel and for Rhine shipping. This industrial enterprise prospered from its inception and the company soon had branches throughout Germany and Austria. In 1902, Stinnes formed the company of Hugo Stinnes, Ltd. with a capital of 5,000,000 marks as a holding company. During the war the Stinnes industries added greatly to their financial resources through military contracts. Following the war, when Germany was going through a period of economic upheaval, Stinnes interests continued to advance, buying in coal and ore mines, steel mills, shipping companies, banks, newspapers, and countless other industrial organizations. At the time of his death, Stinnes was a member of the board of directors of practically all the important coal and iron companies in Germany, having several hundred directorate connections. The Stinnes group, as listed in detail in IRON TRADE REVIEW, Sept. 6, 1923, in an article on "German Industries in Combine," was the most powerful of present iron and steel consolidations. The total capacity of the Stinnes group per year is 2,900,000 tons of pig iron; 2,400,000 tons of ingots; 4,200,000 tons of coke and 18,900,000 tons of coal. The largest group of the Stinnes iron and steel interests is the Siemens-Rhien-Elbe-Schuckert Union, consisting of the Deutsch-Luxemburgische Bergwerks-und Huetten A. G., the Gelsenkirchener Berwerks A. G., the Bochumer Verein fuer Bergbau und Gussstahlfabrikation and the Siemens-Schuckert company. These companies produce coal, coke, and by-products, pig iron, tubes, castings, and operate blast furnaces; iron foundries, steel works, finishing mills, handle shipping and manufacture electrical products, etc.



The Stinnes interests were widespread covering aluminum and copper works, foundry and machinery factory, explosives, warehousing, exporting, selling companies, newspapers, printing, etc. Stinnes was often called the Lord Northcliffe of Germany, controlling several prominent newspapers. He is believed to have acquired considerable American interests recently when his son toured this country, paying especial attention to the oil field development in the Southwest. Through his extensive industrial holdings Stinnes was able to play a dominating role in the governmental affairs of Germany since the deposition of the Hohenzollerns. An industrial group was influential in formulating policies of administration through the various changes in government and always Hugo Stinnes played a leading part. He was responsible largely for the policies formulated by Germany in connection with the occupation of the Ruhr. Stinnes was chairman of the boards of the following companies: The consolidated German Luxemburger and Gelsenkirchner Mining & Smelting Works (Deutsch Luxemburger Berwerks und Hutten Actiengesellschaft and Gelsenkirchner Berwerks Actiengesellschaft); Muhlheimer Mining association (Muhlheimer Berwerks Verein); the Electric Co. of Rhenish Westphalia, Essen, (Rheinish Westphalishe Elektirzitatswerke); the South German Railroad Co., Bochum-Gelsenkirchner Electrical Tramway Co. and the Gergische Electric Works in Lohningen. He actively served many other industrial corporations as an officer or director, largely in coal and steel.

Men, Not Boards, In War Rule

Secretaries Davis and Hoover Favor Concentrated Responsibility for Instant Decision—Commissions for Administration Undesirable and Cause Delay and Compromise—Congress Asked To Invest President with Large Powers

WASHINGTON, April 15.—Views on organization and mobilization of industry in case of war emergency were given in the last few days before the house and senate military committees by Assistant Secretary of War Dwight F. Davis and Secretary of Commerce Herbert Hoover. These views are of vital interest to the iron and steel industry in that they propose some wide departures from administrative policies affecting the industry which were in force in the world war.

Both officials favored a general clause in the McSwain bill and others in the house and the Capper bill in the senate for industrial and civilian mobilization generally which would give the President blanket authority to fix prices, wages transporation charges, compensations, embargoes on imports and exports and other matters. Assistant Secretary Davis said one of the real problems is to invest the President with specific authority by law to fix priorities over resources and to stabilize prices. He pointed out that a law should be framed now to cover war time needs and thus pave the way for more speedy and adequate preparedness in case of another major or minor conflict, and cited the fact that the world war was costing the United States $44,000,000 daily at its close. If the war could have been shortened only a few days, he said, a tremendous difference would have resulted in its ultimate cost.

Secretary Hoover said his opinion was that for all administrative functions, war especially requiries single-headed responsibility. Men must make instant decisions and take instant responsibilities, he continued, and that, therefore, the use of boards or commissions for adminstrative and executive functions is fundamentally wrong. It results in vacillation, he said, delay and compromise. On the other hand questions of semijudicial or policy character can advantageously be determined by more deliberate agencies, such as a board, and some functions of co-ordination of policies must be performed by them.

"With this thought," Mr. Hoover said, "I would create an administrator of munitions instead of a war industries board and would provide that the munitions divisions of the army and navy should be immediately transferred to his direction, and that he should then develop the general coordination of industry necessary for the complete industrial mobilization of munitions manufacture and the control of the sequent disturbances which necessarily arise in civilian commerce. I would exclude from his activities any control of food, fuel, labor or transportation.

"I would likewise set up an adminstrator of overseas trade in place of the war trade board, and I would give to this administrator practical control of imports and exports and an advisory body for the determination of policies, composed of representatives of the munitions, food, fuel, shipping and railway administrators, I also would set up a power administrator instead of the power commission. "I would set up a shipping adminstrator and a railway or inland transporation administrator in addition to these which you have provided in the McSwain bill.

"I would maintain the price fixing commission, and aside from the chairman I would compose this again of representatives of the munitions, food, fuel, shipping and labor adminstrators and would give it the responsibility of determining prices of all commodities and to determine wages.

"I would make the war council composed of the secretary of war, secretary of the navy, munitions food overseas trade, fuel, labor, shipping and railway adminstrators, and chairman of the price fixing commissions who should sit directly under authority of the President."

Additional powers of the President in time of war suggested by Secretary Hoover were that of exercise of war powers or requisition under circumstances that 75 per cent of the estimated value may be paid and the remainder determined by the courts in case of disagreement; suspension of habeas corpus, and to provide generally complete and absolute authority over the civilian life in all ramifications.

Secretary Hoover declared against war profiteering and said he was in favor of any provision to punish those found guilty of practices against the common welfare. Assistant Secretary Davis has pointed out on several occasions the co-operation and willingness to stabilize prices of the steel industry in the world war.

Secretary of the Navy Wilbur differed with Secretary Hoover and Assistant Secretary Davis in his testimony before the house committee in that he would be cautious in granting extensive executive and administrative powers to officials, even in war, without constitutional amendment.

Wellman-Seaver Profits Increase in 1923

Net profits of the Wellman-Seaver-Morgan Co., Cleveland were $8341 in 1923, compared with a deficit of $143,113 in the preceding year according to the annual pamphlet report of the company. Unfilled orders at the end of 1923 amounted to $1,400,000 against $787,000 at the close of 1922. The report shows cash on hand of $138,750 and notes and accounts receivable of $507,308. Notes and accounts payable are $334,846. Surplus as of Dec. 31 was $907,781 against $636,347 one year before. President Edwin S. Church in his report to stockholders says:

"The third and fourth quarters were operated at a profit of $87,938, canceling the loss of the first six months and leaving a profit of $8,341. We are starting this year each month at a substantial profit. There is still due $160,000 on the sale of the Akron plant which is not included in the balance sheet. By disposing of this and other unprofitable lines and consolidating the two Cleveland plants a substantial saving can be made.

"Last year we finished the design and experimental work on our new type gas producer. Forty-eight have been sold. This gas producer, we feel, will be one of our most profitable lines.

"We also developed a new type rotary car dumper. Six of these have been sold. All of the experimental work has been charged off."

Arraignment Date Set

Members of the American Malleable Castings association indicted by the federal grand jury at Cleveland March 27 on a charge of violating the Sherman antitrust law will be arraigned in United States district court, Cleveland, April 21. Forty-seven companies are named, and the district attorney, A. E. Bernsteen, states that each one must be represented for arraignment by some officer in addition to the one officer cited in the indictment.

Central Brake Shoe & Foundry Co., Chicago, has increased its capital stock from $120,000 to $150,000.

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Europe Has Her Opportunity

THE Dawes-McKenna report is a historic and profoundly constructive document. While it is improbable that the proposals for reparations settlement will bring a final and immediate solution of old world postwar perplexities, the important thing is that the report marks the greatest single forward step, out of the Europe economic morass since the armistice.

The report stands upon the basic principles that Germany has the capacity to pay reparations, that her nationals should assume a tax burden at least as heavy as that borne by the people of the allied nations; that the creditor nations should share in Germany's increasing prosperity, to determine which an index number is established; and that in order to pay her debts, Germany must have, first, a balanced budget and stable currency; and, second, economic unity. The latter implies the abandonment of the French economic control of the Ruhr. Military occupancy may be maintained, so far as the working of the Dawes plan is concerned.

Only the test of time will prove whether or not the plan is workable. Its success involves two distinct problems. One is the raising of revenue within Germany. The second problem concerns transferring this revenue in acceptable form to the creditors. The realization of $625,000,000 annually by 1929 from railroad and industrial mortgages and from taxes and duties, it is hoped by the experts, will solve the first problem.

The second is even more difficult. The committee itself admits that the sums that can be transferred to the allied nations are "wholly unpredictable." This is because of the fundamental economic fact that international debts can be settled only with gold, goods or services. Germany lacks the gold. Therefore, in order to obtain sufficient foreign credits to make payments abroad she must have a vast excess of exports of goods and services over imports.

The committee points out that insistence upon reparations payments in the absence of an export surplus would demoralize the exchanges, depreciate German currency and nullify the entire plan. It therefore sets up a mechanism making the export surplus the real measure of Germany's capacity to pay. This is in accordance with sound economic principles but it is not in accordance with the popular understanding of collecting reparations from Germany.

An export surplus of $625,000,000 annually would represent about 7 per cent of Germany's estimated annual national income. If time proves that Germany can raise this amount and transfer it, the question arises whether or not other nations will relish absorbing such an outpouring of German goods. This point undoubtedly will loom large in future discussions.

The probable effects of the plan upon business in this country center upon two thoughts. Will European demands for American products, or European competition be the controlling factor? A general and gradual readjustment is likely. Economic collapse in Europe has reacted most acutely upon agriculture and raw materials. The tendency probably will be to restore the balance between farm products and crude materials on the one hand and manufactures and industrial wages on the other. That process will be a gradual one. Meanwhile copper, cotton, and food may be in moderately better demand.

The establishment of a German gold bank of issue and foreign loans of $200,000,000 are contemplated by the report. Of this sum $100,000,000 may be sought in the United States. That would provide employment for some of our superabundant banking and gold resources. It would, lessen the danger of inflation.

The benefits from the Dawes plan will begin to flow upon the world gradually but surely. Europe's condition long has been retarding the return of normal world conditions. After many dark, disquieting months, she has before her a reasonable opportunity for her own reclamation. Many obstacles remain in the path, but there is likely to be no turning back now until the goal of nominal restitution is attained.

Avoiding Waste of Structural Steel

THE claim of the American Institute of Steel Construction that $30,000,000 was wasted in 1923 in superfluous steel in buildings throughout the country should arouse the fabricating industry to action. Sales based on waste surely are not good business. The claim is founded on the institute's

recommendation that the working stress used in designing steel for structural purposes be increased from 16,000 pounds a square inch to 18,000 pounds a square inch. Since the start of the fabricating steel industry the figure 16,000 pounds has been unaltered as the universally accepted working stress for figuring the loading of beams, channels and other structural shapes. All hand books, steel company catalogs, architects' tables, etc. are based on this figure.

In the past 25 years the properties of steel used in structural shapes have undergone radical changes. For instance the elastic limit has been increased from about 30,000 pounds per square inch to 40,000 pounds per square inch. Why is it, then, that the steel industry which is so progressive in most lines has failed to revise its original figure for the stress of steel under tension?

The American Institute of Steel Construction has prepared a set of standard specifications for structural steel for buildings based on a new working stress of 18,000 pounds per square inch. This figure is exceedingly conservative if compared to the increase which has been made in the elastic limit of shapes now in use. Several cities already have adopted the new specifications and others doubtless will fall in line as the provisions of the new standards become better known.

Among the cities to consider the subject recently is Boston where a bill was presented several weeks ago adopting the standard specifications prepared by the American Institute of Steel Construction. No objection to the bill was presented. Other cities should follow.

Labor's Opportunities Increase

"THE fiber, stability and soundness of American life depend on establishing the dignity of labor, not as a copy-book maxium, but as a national habit of mind," says Senator Capper, of Kansas. This expresses a thought that has been in the minds of many industrialists for years, but coming from industrial employers it has been discounted in some quarters, not the least important of which has been some of the so-called radical rural districts.

To suggest that there must be a new conception of workmanship, that more attention must be given to the preparation of young men for skilled industrial work has been equivalent to arousing suspicion in some minds. Mention that there must be more diligent application; that workers must produce more, or at least do as much work as they were accustomed to doing before the war, has appeared synonymous with "antiunion labor propaganda." The senator declares:

"Our industries clamor for trained workers, but our schools continue to turn out thousands upon thousands of young men and women fitted for already overcrowded professions."

The trend toward "white-collar" jobs has been noted for some time; what needs to be noted more widely is the remarkable growth of employe participation through stock ownership in many of the largest manufacturing industries in the United States. One of the most recent news items, scarcely mentioned in the daily press of the country, is that 20,000 employes of the Bethlehem Steel Corp., have applied for a total of over 51,000 shares of its preferred stock.

Industrial America is entering a new era in one important respect; the man who labors is being given to understand that there is opportunity for him to participate financially and otherwise in the affairs of the company for which he works. Employers have gone a long way toward showing the fallacy of arguments for a "white collar job." This point should be emphasized and set before young America whenever the need of promoting "the dignity of labor as a habit of mind" is raised.

Foreign Steel Unsettles Market

FROM a tonnage standpoint, the sales of European steel to Atlantic coast buyers are inconsequential considering the total requirements of that general section of the country. Furthermore it is not likely that any great portion of the steel needs of the eastern tidewater territory will be filled abroad. For one reason, the foreign mills have other fields of distribution which are more advantageous.

But the effects of the sales of foreign steel on the general steel market in the East is out of all proportion to the tonnage involved. It generally is known that the foreign steel can be had at about $10 a ton lower at tidewater than domestic steel. The purchasers of foreign steel have included jobbers and consumers, particularly fabricators. Practically all of the eastern consumers have had the low-priced material offered to them. Hence, these buyers are being influenced to a considerable extent in their price views by the figures on the foreign product. No price named by an American mill sounds like a bargain to them. Just how far-reaching the effect will be cannot be estimated, because it is likely that manufacturers of bolts, rivets, garden implements and various articles of hardware who are using low-priced foreign steel as raw material might be tempted to take business on a price basis.

The duty on the European bars and shapes which now are coming in, usually is $6 a net ton, and this is not proving much of an obstacle to the foreign producers. Just what should be done to remedy the matter presents a complicated subject. It involves the tremendous amount of the world's gold which is in the United States, and the necessity of taking foreign goods in exchange for our own. It involves the general economic situation in Europe and its effect on our own economic situation. One thing is certain, however. The present tariff on steel is inadequate from the standpoint of keeping out foreign steel; and as long as even a little of this foreign steel continues to come in on the eastern seaboard, its effect on the domestic steel price situation will be depressing.

Current Statistics of Industry

Unfilled Tonnage Drops Slightly in March

Unfilled bookings of the United States Steel Corp. as of March 31, were 4,782,807, a decline of 130,094 tons, or 2.6 per cent. This is the first reduction since November of last year. Further comparisons follow:

Date	Total	Change, tonnage	Change, per cent
Mar. 31, 1924....	4,782,807	130,094—	2.6 —
Feb. 29, 1924....	4,912,901	114,472+	2.3 +
Jan. 31, 1924....	4,798,429	350,183+	7.8 +
Dec. 31, 1923....	4,445,339	76,755+	1.7 +
Nov. 30, 1923....	4,368,584	304,241—	6.5 —
Oct. 31, 1923....	4,672,825	362,925—	7.2 —
Sept. 30, 1923....	5,035,750	378,913—	6.99 —
Aug. 31, 1923....	5,414,663	496,100—	8.4 —
July 31, 1923....	5,910,763	475,498—	7.4 —
June 30, 1923....	6,386,261	595,090—	8.5 —
May 31, 1923....	6,981,351	307,158—	4.21 —
April 30, 1923....	7,288,509	114,823—	1.5 —
Mar. 31, 1923....	7,403,332	119,343+	1.63 +
Feb. 28, 1923....	7,283,989	373,213+	5.40 +
Jan. 31, 1923....	6,910,776	165,073+	2.31 +

Steel Traffic Higher

Pittsburgh, April 15.—March saw a decided increase in the transportation of steel products over the three rivers in the Pittsburgh district, 75,847 tons being moved as against 50,673 tons in February. The March tonnage shows the greatest aggregate since the gathering of such statistics, the nearest approach being made in June, 1923, when 66,424 tons was transported. This tonnage, 75,847 tons, included 21,286 tons over the Allegheny, 29,951 tons over the Monongahela, and 24,610 tons over the Ohio. Shipments of steel products in 1923 and in 1924 to date by months were as follows:

	Allegheny river	Monongahela river	Ohio river	Total
March	21,286	29,951	24,610	75,847
February ...	....	27,005	23,668	50,673
January, 1924	....	15,700	11,050	26,750
December ..	485	13,460	35,420	49,365
November ..	304	11,980	12,450	24,734
October	....	20,425	9,755	30,180
September ..	....	18,256	11,390	29,646
August	....	34,590	20,922	55,512
July	100	36,827	16,335	53,262
June	75	44,791	21,558	66,424
May	....	25,910	21,200	47,110
April	100	21,825	20,800	42,725
March	....	17,291	16,191	33,482
February ...	....	19,337	3,285	22,622
January, 1923	....	26,997	1,030	28,027

By-Product Coke Output Near Maximum Point

Washington April 14.—Following the upward course of pig iron and steel, the output of by-product coke increased in the month of March when total production was 3,220,000 net tons, an increase of 239,000 tons, or 8 per cent, compared with February. The increase in average daily output however, was smaller; against an average of 102,805 tons in February the daily rate in March was 103,876 tons, an increase of 1 per cent. The ratio of production to capacity was 86.7 per cent. Of the 70 plants in existence 65 were in operation and 5 were idle.

The present rate of by-product coke output is close to the maximum so far reached in the history of the industry according to the geological survey. Production for the month of March 1924 was slightly less than that in the corresponding month a year ago when 3,256,000 tons were made. The cumulative output for the first quarter of 1924, however, exceeds that of 1923 by 1.4 per cent. The record production for a single month is 3,328,000 tons, established in May 1923.

It is more than coincidence that for the past six months the output of by-product coke expressed in net tons has been almost exactly equal to the output of pig iron expressed in gross tons. Thus against 18,519,000 gross tons of pig iron there has been produced 18,337,000 net tons of by-product coke. The relation between the beehive coke, by-product coke, and pig iron markets is now such that in times of depression, such as 1921 and the first three quarters of 1922, the output of by-product coke exceeds pig iron. In times of a very active iron market, the pig iron curve passes the by-product coke curve. And when the two are on a level the signs point to wholesome activity of business midway between boom times and depressions. It is significant that the March output of pig iron increased more rapidly than that of by-product coke.

Increased production at blast furnaces called forth an increased output of beehive coke. The total for the month of March is estimated at 1,343,000 net tons, an increase of 11 per cent over February. Of the total quantity of coke produced in March, 4,563,000 tons, 70.5 per cent was made in by-product ovens and 29.5 per cent in beehive ovens. The comparative monthly outputs of beehive and by-product coke in net tons, follows:

	By-Product Coke	Beehive Coke	Total
1917 Monthly ave.	1,870,000	2,764,000	4,634,000
1918 Monthly ave.	2,166,000	2,540,000	4,706,000
1919 Monthly ave.	2,095,000	1,638,000	3,733,000
1920 Monthly ave.	2,565,000	1,748,000	4,313,000
1921 Monthly ave.	1,646,000	462,000	2,108,000
1922 Monthly ave.	2,379,000	714,000	3,093,000
1923 Monthly ave.	3,127,000	1,497,000	4,624,000
Jan. 1924	3,094,000	1,154,000	4,248,000
Feb. 1924	2,981,000	1,211,000	4,192,000
March, 1924	3,220,000	1,343,000	4,563,000

For the fourth successive week the production of beehive coke declined. The total output in the week ended April 5 is estimated at 281,000 net tons, a decrease of 15,000 tons. This decline reduces the present rate of output to but 66 per cent of that prevailing a year ago. The decrease was confined to Pennsylvania, Ohio, and West Virginia. The comparative weekly output record follows:

	Week Ended— Apr. 5, 1924a	Mar. 29 1924b	Apr. 7, 1923
Pennsylvania & Ohio..	223,000	237,000	343,000
West Virginia	15,000	18,000	24,000
Alabama, Kentucky Tennessee & Georgia.	23,000	22,000	28,000
Virginia	10,000	9,000	18,000
Colorado & New Mexico	6,000	6,000	9,000
Washington & Utah...	4,000	4,000	6,000
United States Total....	281,000	296,000	428,000
Daily Average	47,000	49,000	71,000

(a) subject to revision. (b) Revised from last report.

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The Business Trend

April 17, 1924

BY JOHN W. HILL, FINANCIAL EDITOR

THE Dawes report is a development of overshadowing importance. Its prompt acceptance by the reparations commission forecasts approval by the allied nations. Present indications are that Germany will accept also.

For years the unsolved economic problems of Europe have blocked the path of return to normal world conditions. It is too much to suppose that the Dawes committee has found the key which will finally unlock the door of European economic recuperation.

Nevertheless it does mark the most important step in that direction made since the armistice. Practical application of the plan will reveal any shortcomings it may possess. Adjustment of the towering question of reparations totals remains a task for the future.

Response Is Small

Domestic and financial markets have made no perceptible response to the favorable indications of the report. This is because the task is so vast and the ramifications so many, that the practical effect of the plan is not to be seen at a glance. Benefits are more likely to be gradual than immediate.

Possibly the first result of the operation of the plan will be the placing of large foreign loans in this country. This will provide employment for our excessive gold and banking reserves. It will moreover mean purchases of copper, cotton and food for Germany.

Raw material and food markets have felt most keenly the distress in Europe. Recuperation of Europe may tend to strengthen these markets. At the same time manufactured goods may find keener competition. That will tend to correct the present dislocation between raw material and industrial goods.

Trade Is Slower

Financial sentiment has been impressed by the accumulating evidence of some slowing down in the pace of industry. The decline in unfilled steel orders, lower commodity prices, small freight movements and curtailed industrial outputs all point in the same direction.

Yet there is nothing which indicates the menace of serious depression. Trade activities are lower than during the early months of 1924 or 12 months ago. But they are high by all normal standards.

What is happening is that industry is attempting to match its pace with current consumption. Production in many lines recently has run ahead of current needs. Therefore, any curtailment of outputs now is healthy, especially since scant future buying has prevented the piling up of burdensome inventories.

The Barometer of Business

Weekly Comparison

	Last week	Week before	One mo. ago	One year ago	1913
Business failures ..	382	393	425	394	...
Res. System %	79.3	78.8	80.5	76.3	...
Cash ratio Fed. Loan rate, 4-6 mo. N. Y. %	4½	4½	4½	5-5¼	5½-6
25 industrial shares	$104.97	$108.08	$114.41	$113.46	$58.19
Aver. 25 railroad shares	$61.84	$63.12	$61.25	$63.04	$82.90
Aver. 40 bonds ..	$78.33	$78.65	$77.84	$77.00	$93.00
Car loadings, week ended March 29	907,548	908,651	935,109	936,374	*858,827
Bank debits, 246 cities (000 omitted) *1920	$9,328,587	$10,420,311	$9,034,234	$9,538,260	.....

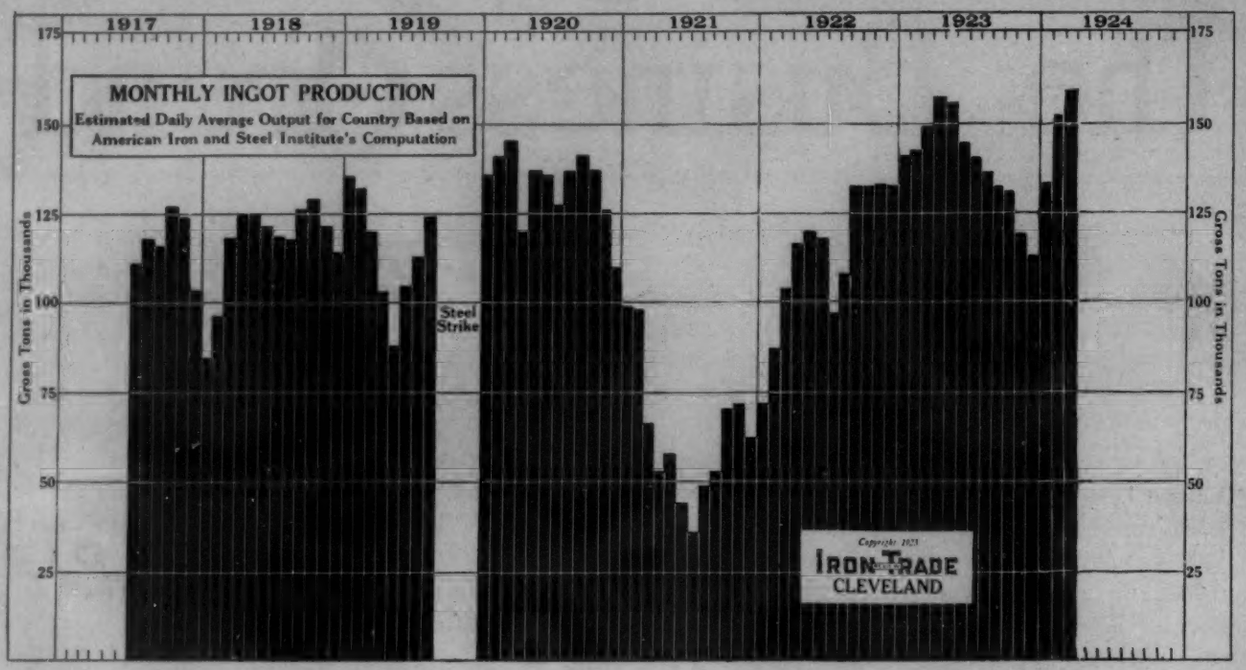
Foreign Exchange (Demand)

	Normal	Last week close	One week before	One month ago	One year ago
Sterling	$4.86	$4.33	$4.33	$4.28	$4.65
Francs	19.3c	6.04c	5.78c	4.73c	6.68c
Lira	19.3c	4.43c	4.43c	4.26c	4.98c

Monthly Comparison

		One Month before	One Year ago	1913 Mo. average
Dodge Building awards in 27 states (sq. ft.)	68,425,100	48,036,108	65,246,000	31,250,000
Business failures: Number	1,767	1,780	1,682	1,336
Liabilities ...	$97,651,000	$35,942,037	$48,393,138	$22,732,000
Exports	$367,000,000	$395,170,129	$306,957,000	$233,195,000
Excess of gold imports	$34,606,134	$44,993,832	$6,983,000	†$630,716
Bureau of labor price index ...	§152	151	157	100
Bradstreet's price index	136.9	139.4	150.7	100
Economist's British price index	170.8	171.8	161.6	100
Nat'l Industrial Con. board living cost index	§163.9	164.6	157.5	‡100
New incorporations	$808,923,700	$661,048,200	$500,819,000	$172,131,000
Railroad net earnings	§71,000,000	$51,000,000	$38,000,000	$59,301,000

†Excess of gold exports. ‡July, 1914. §February.

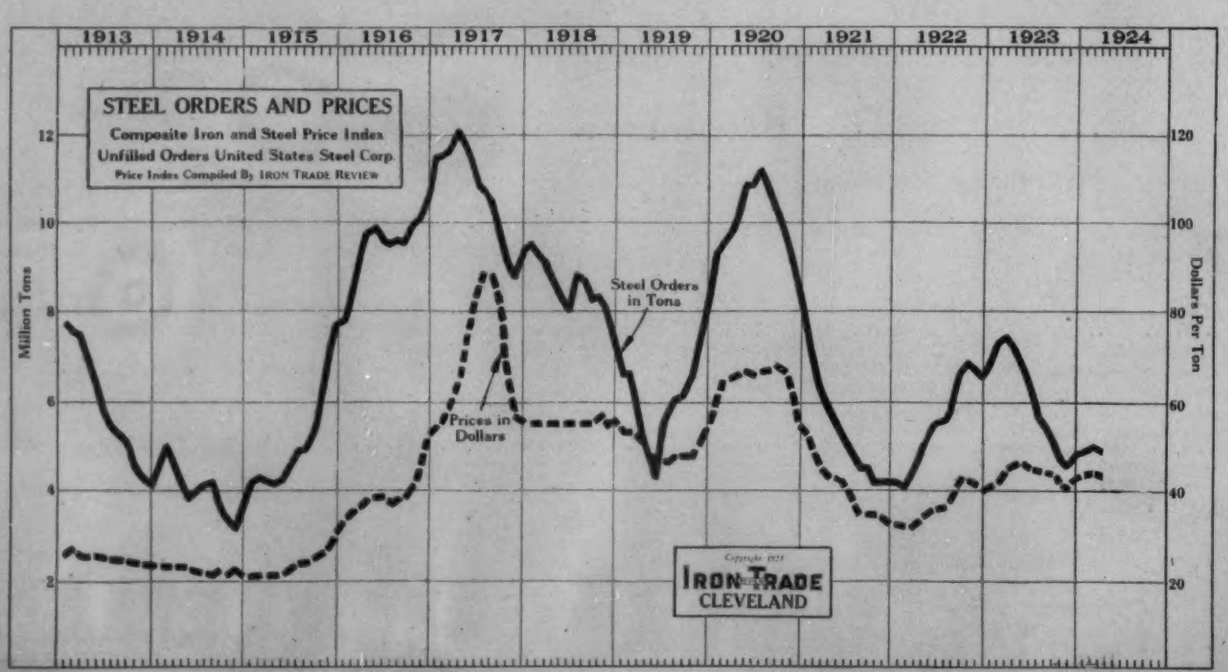


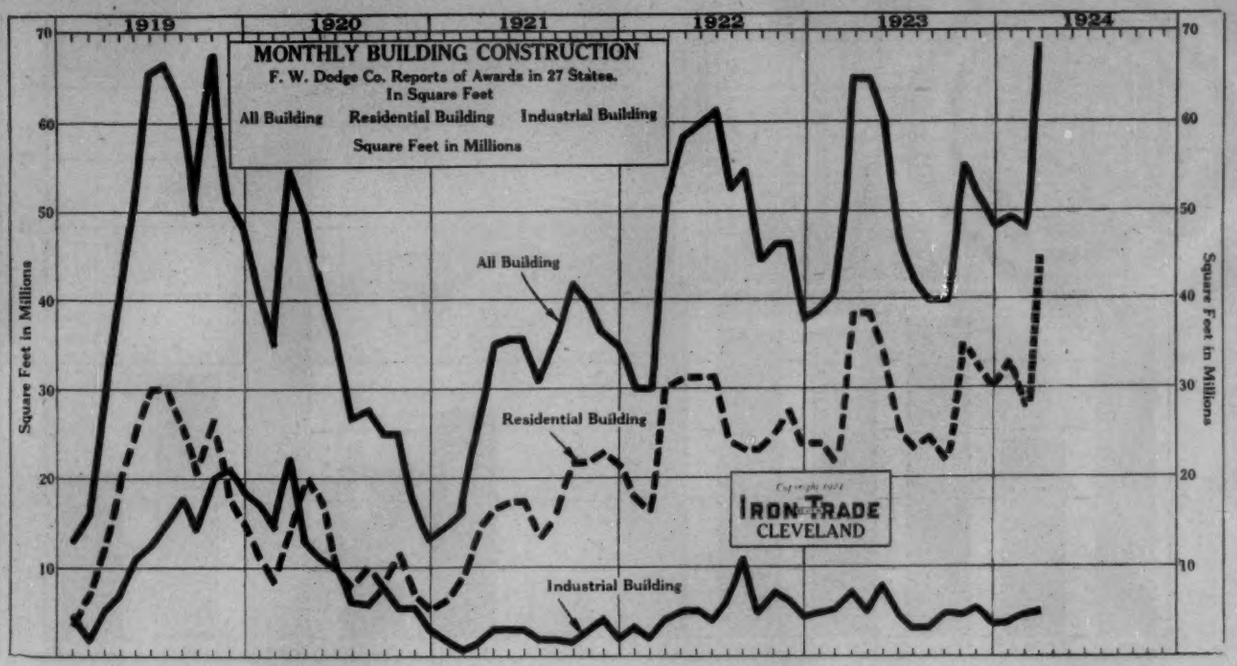
Ingot Production

THE daily average production of steel ingots in March made a new high mark for all time. The record reached was 159,455 tons average daily. This was at the rate of 49,590,000 tons daily. It compares with the previous peak of 157,776 tons daily or an annual rate of 49,060,000 tons in April 1923. Diminished demand, some recession in operations and weakening prices all indicate that the peak of output has been touched. Evidently large outputs have been going into consumption and there is no evidence of burdensome inventories.

Steel Orders and Prices

UNFILLED orders of the United States Steel Corp. declined 130,094 tons in March, the first decrease since November. The steady gain in orders ended with February added 544,317 tons to the corporation's bookings. Orders are now 35 per cent smaller than they were at the end of March 1923, the peak of last year's movement. They are 57 per cent below the 1920 top. Bookings are at an abnormally small level relative to outputs indicating close buying. They are only 15 per cent above the low point of the 1921 depression.



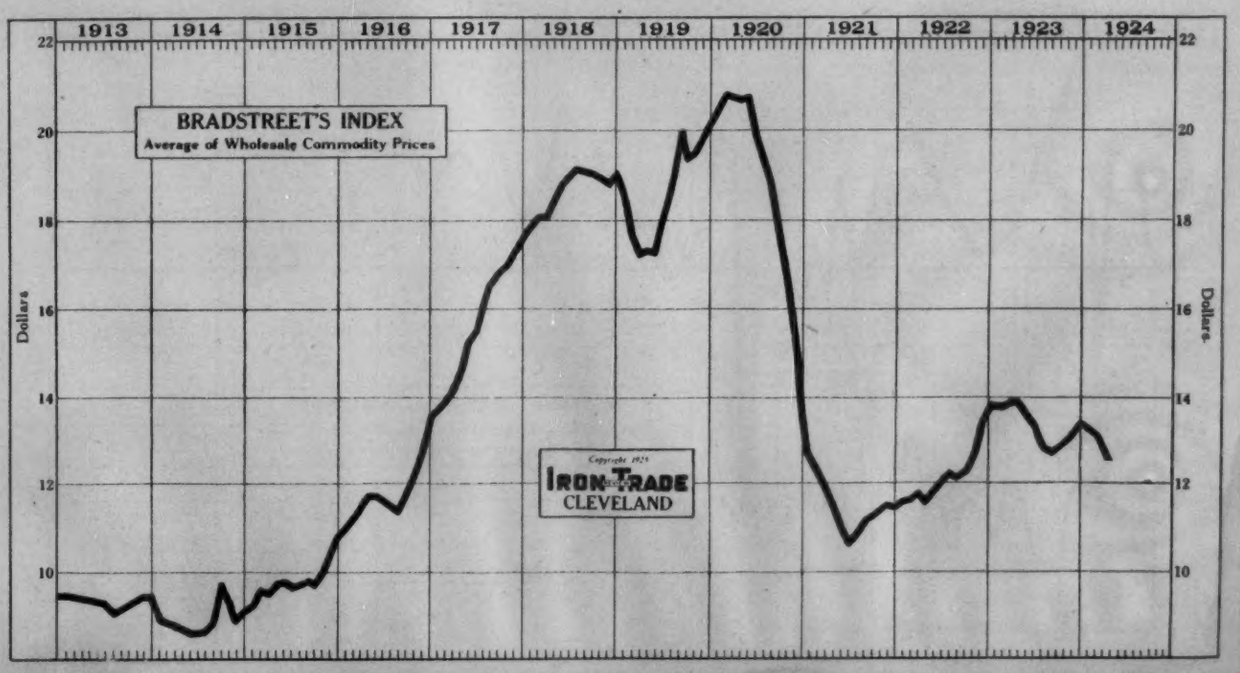


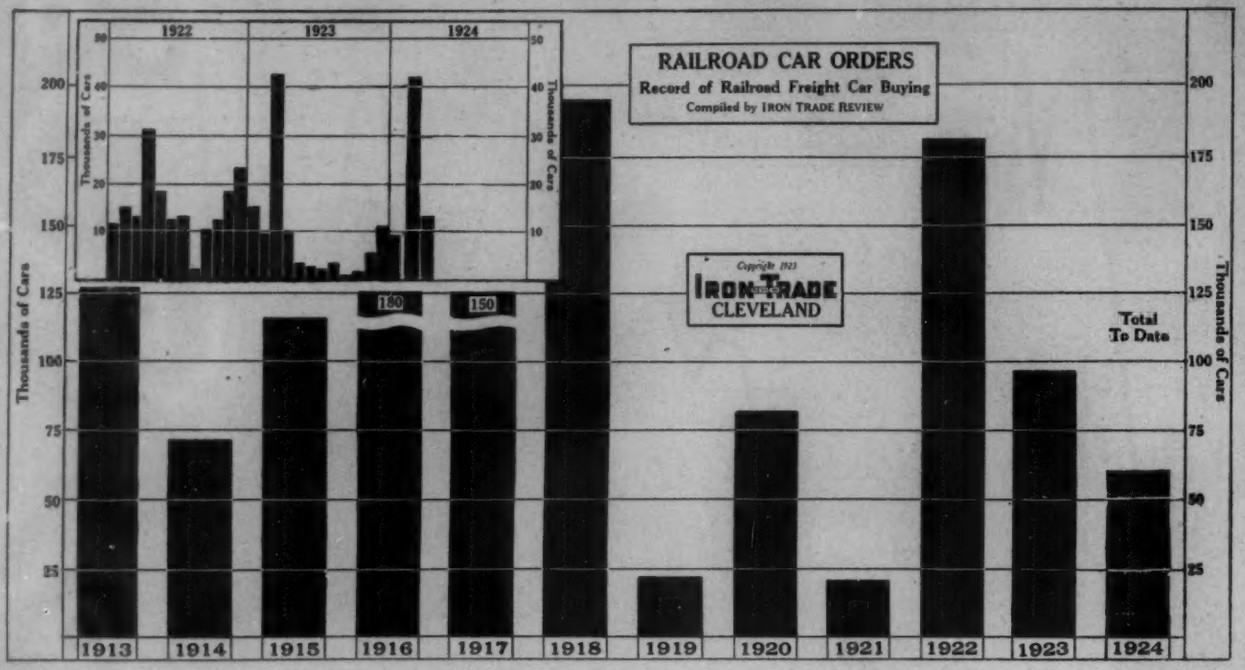
Building Construction

THE record of building awards in 27 northeastern states in March was surpassingly high. The total of 68,425,100 square feet was 30 per cent greater than it was in February. It was nearly 5 per cent above the previous high record for all time in April 1923. Residential building increased 60 per cent over February and 13 per cent over March 1923. Industrial building gained 13 per cent over February but fell 42 per cent under one year ago. Speculative housing building in New York City explains the big gain in building.

Bradstreet's Prices

THE wholesale commodity price trend continues definitely downward. *Bradstreet's* index as of April 1 shows a decline of 1.8 per cent in a month and of 9 per cent from the high point of 1923, one year ago. The price level, by this measure, is now 18.3 per cent above the low point of 1921 and 36.9 per cent above the 1913 average. Prices have weakened, apparently, because large outputs of many lines have made up shortages and overtaken current requirements Moreover, competition is keen and forward buying is restrained.



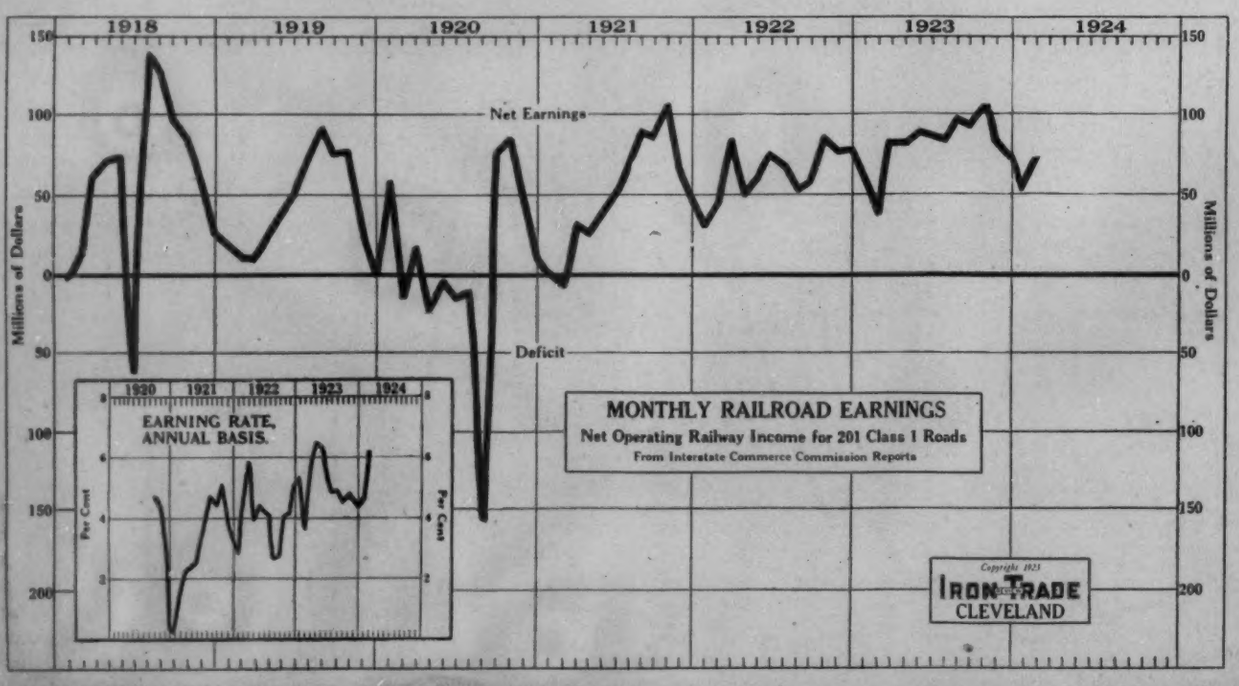


Car Awards

RAILROAD purchases of rolling stock have held to an unexpectedly high level during the first quarter. Total awards of freight cars in the first three months of 1924 amounted to 62,642 compared with 63,669 cars in the same period of 1923. February orders exceeded February 1923, but March brought a sharp decline. The total of 13,145 cars compared with 41,396 in February and 42,499 in March 1923. Railroad purchases of cars may tend to diminish further as freight movements have dropped and idle cars are accumulating.

Railroad Earnings

PERCENTAGE earnings of the Class I railroads in February were the largest in their history, with two exceptions. Net income amounted to $71,191,000, or 6.28 per cent on the tentative valuation. This is the largest February net on record. It compares with $39,274,900 or 3.76 per cent in February 1923 and with $51,281,000, or 4.38 per cent in January. Gross income of the roads in February increased 7 per cent over 12 months ago and operating expenses were slightly less. Freight movements were the highest for the period on record.



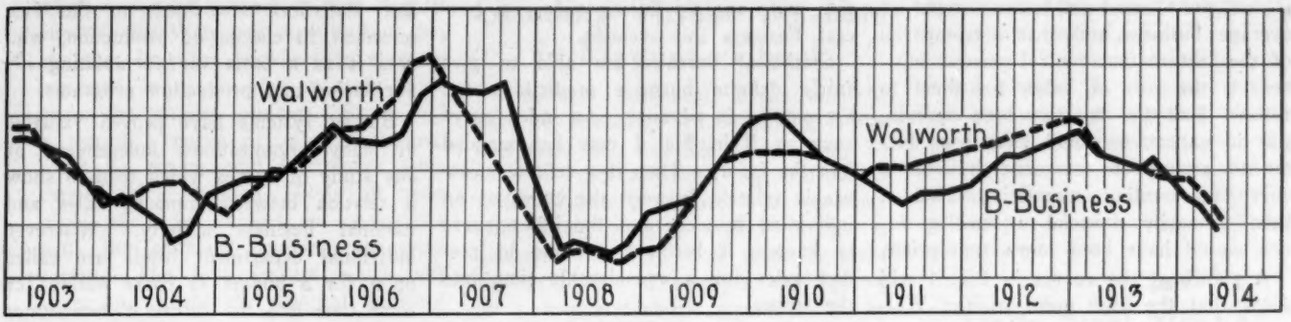


Fig. 1—The Curve of Sales of the Walworth Mfg. Co. Over a Period of 11 Years Coincides to a Remarkable Extent With a Typical Business Trend Curve

Forecasting the Curve of Sales

How Manufacturer Has Developed a Budget System of Control for Its Operations —More Effective Planning Is Made Possible—Match Company Statistics with General Trade Movements

BY H. R. SIMONDS

MANUFACTURERS face three variables in the demand for their product. One is the seasonal variable, the second is the business trend variable, and the third is the individual commodity variable. In the case of skates or Christmas tree decorations the seasonal variation in demand is exceedingly marked, while the demand for hair pins and needles, for instance, changes but slightly from one time of year to another.

Because of its regular and frequent recurrence, seasonal demand in most cases is fairly easy to determine and to predict. The business trend variation does not conform to any regular order or recurrence, and as it moves in broader sweeps than the seasonal variation, it is correspondingly difficult to determine accurately. It is possible, however, to study both of these variables and arrive at conclusions which in a general way may be relied upon. The commodity variable is outside the scope of this article.

Obviously if an index to future demand can be worked out and then correctly used, it should be of great value to any industry. Statistical companies constantly are preparing curves and prognosticating future demand, and manufacturers constantly are receiving this advice and either ignoring it or using it in a superficial manner. In recent years a few manufacturers have started to investigate the possibility of predicting future sales and of then taking advantage of such prediction in plant operation. The Walworth Mfg. Co., Boston perhaps has gone as far as any other in this direction, and the present article is based largely on the experience of this company in developing a budget system for its operation.

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The Walworth Mfg. Co. has a well defined seasonal fluctuation. Definite facts concerning a seasonal curve are so easy to determine and so vital a factor in operation that it is surprising that more companies have not given the subject earnest study. Even manufacturers having a well defined and widely fluctuating demand from one season to another seldom take advantage of the experience of past years in planning future production. It is not uncommon to find a plant continuing each year to greet the seasonal fluctuation with surprise as if it were a new condition. However, it is one thing to work out a careful sales curve and another thing to make proper use of it in molding the policy of plant operation.

Plan Production by Curve

For the plant which has not investigated its sales curves, the natural first step would be to determine its seasonal variation and then to utilize the facts thus indicated in planning the buying of material, the stocking of finished product, and the rate of manufacture.

The correct use of a seasonal curve is dependent upon some assumption as to general business. Thus. if a certain manufacturer prepares for a production say of 50,000 electric motors during a future 12-month period, he should be able to determine from a seasonal curve the proportion of this amount corresponding with each month.

The success of the Walworth Mfg. Co. in establishing a definite relationship between the company's business and a general national index makes it seem highly probable that many other manufacturers could work out a relationship to guide the operation of their individual plants. Therefore a brief description of what the Walworth company has done should be of general interest.

One of the first steps was to organize a planning and statistical department. This department took the facts already at hand from the accounting department and developed curves that could be compared with existing national barometers. It soon became apparent that the business of the company fluctuates in definite cycles which conform closely to general business cycles. This discovery turned attention to a study of national barometers. The planning and statistical department requested that all letters and literature bearing upon business forecast be forwarded to its files so that they might be reviewed and analyzed. Instead of going into the waste baskets of the executives, these letters became the textbooks of the company investigators.

It was assumed that the index which most closely fitted the past history of the company's business would most closely indicate the future. Many curves were analyzed. Fig. 1 shows the Walworth curve superimposed on a typical national barometer based on bank clearings and Bradstreet's price index. Of course, it is important to pick out the right kind of national barometer for comparative purposes. The Walworth investigators point out that their industry

is of the "bread-and-butter" type of average business and that a composite of the factors that control general business is the sort of index for them to follow. Had the business been speculative in nature, it would have been better to attempt to correlate it with a curve representing speculation. Had it been primarily financial a banking index would have been more appropriate.

A glance at the curves in Fig. 1 will show that the high point of the Walworth curve almost invariably occurs at the same time as the high point of the national index curve. A close study of this chart has brought many heretofore unrecognized facts to light.

It will be seen that in recent years the Walworth curve has risen more rapidly. This is attributed to more effective planning and consequent prompter shipments of merchandise after the receipt of orders. In earlier days, the company had to accept orders as they were offered and to produce the goods as soon as was physically possible thereafter. Now with a fairly reliable means of forecasting demand the company is able to manufacture to meet known requirements, and this has meant speeding up shipments after the receipt of orders. This in turn means that the index line which is based on billings will rise more rapidly during times of general business improvement.

Statistical bureaus are able to give fairly definite business predictions for six months in advance. An index curve such as *B* in Fig. 1 may be extended into the future. Then if a definite measurable relation between the curve of an individual business and the index curve is known, it becomes possible to predict sales for a considerable time into the future.

In the summer of 1921 the Walworth company had its first opportunity to make use of its study of business curves. The national barometer used gave assurance that general business was scheduled for an advance. Industry at that time had just been through an experience that made executives unusually cautious. The Walworth confidence in its recent studies was sufficient, however, to overcome the natural doubt which was in the air. Estimates of sales for 1922 were figured at a 42 per cent increase over 1921 and actual sales were so close to this figure as to seem uncanny.

The program for the year is constantly subject to revision. Each quarter an estimate of actual sales requirements is made. This estimate goes from the sales department through the planning and statistical department to the vice president in charge of production, who uses it as a basis for formulating his purchasing and production programs.

Budget systems have proved valuable in many organizations, independent of any study of curves which tend to show a relation between company sales and national business activity. Wherever individual department heads are called upon for a budget to cover outlay for some time into the future it necessitates a more exhaustive analysis of present and past conditions than is usually made in the regular order of events. At the offices of the Walworth Mfg. Co. this result is found to be one of the major benefits of the whole scheme of budget control.

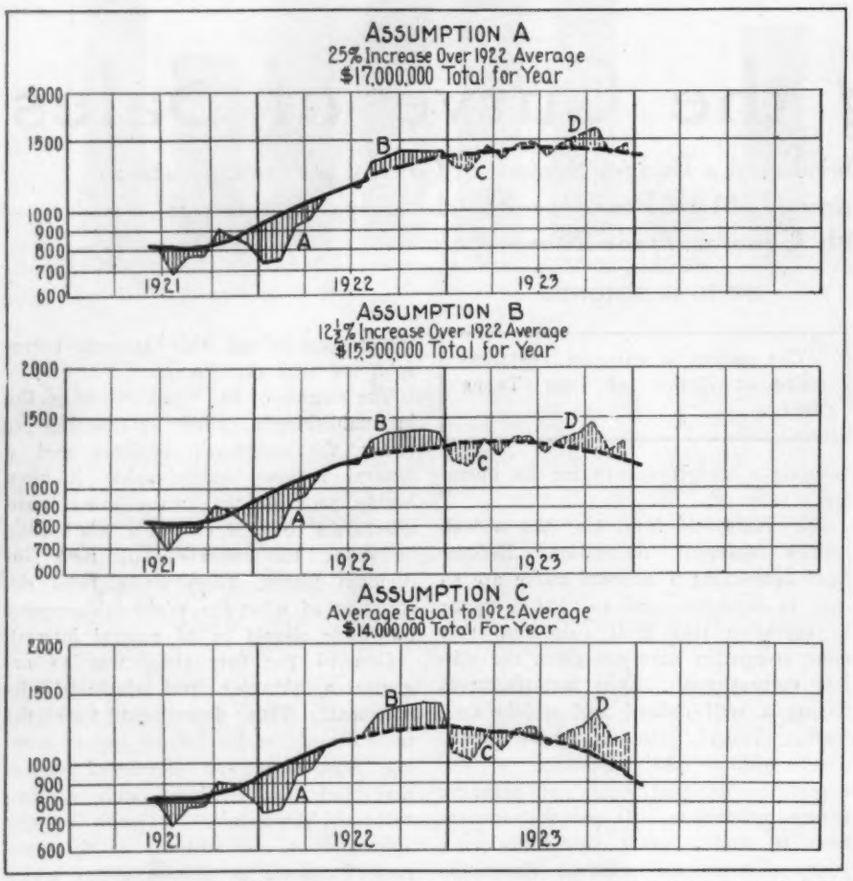


FIG. 2—MONTHLY FIGURES GIVE A SEASONAL CURVE FROM WHICH A TREND CURVE MAY BE DERIVED. IN AN OPPOSITE WAY A FUTURE TREND CURVE MAY BE BROKEN UP TO GIVE THE PROBABLE SEASONAL VARIATION

Lifts Veil From Future

One of the executives who first was in doubt as to the advisability of devoting considerable time to budget estimating, since has said that he now realizes that he never before had a real grip on his job. In order to give an intelligent estimate covering future conditions he had had to become exceptionally familiar with the present. This particular phase of the subject, however, is incidental to the real object of a budget system. Walworth officials comment on the system as follows:

"Having advance information we were able to decide on a production plan that would give us an even flow of material throughout the year, building up our stocks in the spring and summer months to meet the fall demand. This accomplished not only better service to our customers, but greater economy of production, more even employment for our workmen, and a great decrease in labor turnover. It enabled us to anticipate our material requirements and to take advantage of low price conditions. It gave our treasurer exact information as to financial requirements, making it possible to place before directors a definite estimate of the amount of money that would be involved in producing the excess stock necessary for a future increase in demand."

Continuous employment at fair wages is a stimulus to the good workmen that no temporary attraction can equal, and therefore, the company which can operate on an even basis throughout the year has an advantage over the plant with a fluctuating production. Reliable information covering the demand in the fall makes possible to prepare for this demand the spring. The Walworth company in 1922 kept its production practically constant throughout the year.

The statisticians at the Walworth plant state that the introduction of a budgetary control of sales, purchases, receipts and expenditures is comparatively simple. When asked to explain just how a plant would set about to

adopt a similar scheme as that now in effect in the Walworth organization, they say that first the bookkeeping must be arranged so as to give monthly totals under the various headings. From such a record a curve of sales or billings could be drawn, and this curve when carried back through 15 or 20 years could then be studied in comparison with the standard national barometer curves. The first feature which will show up will be the seasonal influence.

In looking into the future the process is reversed. First the general trend line is established, and later the seasonal variation is superimposed on this. Fig. 2 illustrates this method. Here three assumptions as to future sales are made. By a process of comparison and elimination the most logical assumption appeared to be that shown in the center. On this basis a preliminary production program was laid out. The total sales estimate was next broken up into class requirements, and these compared with production facilities. Only then could control instructions be issued.

The general trend curve is carefully watched to see how close it follows the national barometer which has been selected. Material variations in conformity are made the subject of budget corrections. Each month before the existing production orders are completed or new ones received, each works manager sends to the planning or statistical department a statement of his proposed production for the coming month. By information of this sort it is possible to make adjustments and contemplate changes not for the moment, but for the yearly totals.

Bolivia Increases Duty on Contained Tin

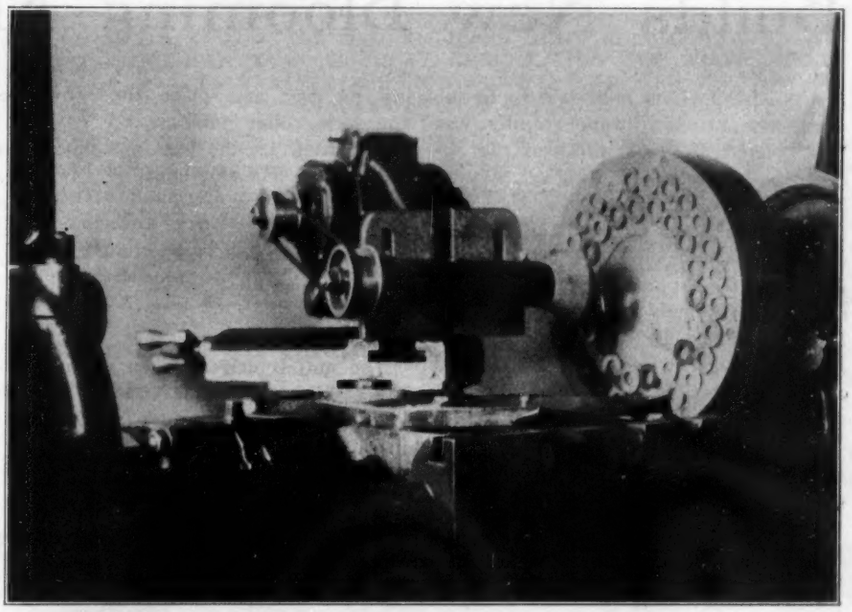
Bolivia's export duties in tin have been increased by executive decree, the United States minister at La Paz reports to the department of commerce. Rates are based on current cash quotations in the Bolivian market, or quotations in the London market as follows:

Quotation for bars 100 per cent fine, per standard ton	Export duty Bolivianos per metric quintal
Not exceeding £100	3.25
For each increase of £1 over £100 to £200	0.10 additional
For each increase of £1 over £200 to £300	0.15 additional
For each increase of £1 over £300	0.20 additional

The duty on minerals and bars is calculated in proportion to the percentage or degree of fineness of pure tin. The exporter will be obliged to declare the quality of the metal, and when discrepancies are found double duties will be charged.

Grinding Thrust Washers in Magnetic Chuck

Auxiliary equipment often can be used to advantage on specific grinding operations. An example of this may be seen in the accompanying illustration which shows a number of hardened steel thrust washers 1 11/16 inches in diameter and 3/16 inch thick mounted for grinding. The parts are located on a magnetic chuck manufactured by the Walker Mfg. Co., Worcester, Mass., while an electric grinder built by the U. S. Electric Tool Co., Cincinnati, is fastened to the cross slide of an ordinary engine lathe. As the illustration shows, grinding is performed with a cup wheel. In the grinding operation, the chuck is operated at a comparatively low speed and the wheel is fed in about 0.001 inch. The lathe crossfeed screw is used to feed the wheel back and forth over the work. After one side is finished, the entire chuck load of pieces is reversed and a cut is taken over the other side. By exercising reasonable care to have the chuck run true and to insure that the grinding attachment is set accurately in place, this method is productive of good results.



THRUST WASHERS ARE MOUNTED ON A MAGNETIC CHUCK AND SURFACED BY AN ELECTRIC GRINDER FASTENED TO THE CROSS-FEED OF THE LATHE

Five fellowships in mining and metallurgical research are offered by the University of Alabama school of mines, Tuscaloosa, Ala., in co-operation with the United States bureau of mines. These fellowships have been established for the purpose of undertaking the solution of mining and metallurgical problems of special importance to Alabama and the other southern states. The problem for investigation during 1924-25 is beneficiation of iron ores, including the following phases: 1. Gravity concentration by means of screens, classifiers, jigs, tables, low washers, etc.; 2. reduction of iron ores by means of roasting furnaces; 3. magnetic concentration; 4. sintering of fine ore concentrates.

Gage Steel Meeting

At the last meeting of the gage steel committee of the bureau of standards, it was decided to call upon automobile manufacturers for their information and experience to the end that more definite knowledge may be obtained as to the best composition and heat treatment of gage steels. The point now has been reached at which extensive gage users can be of valuable service by putting ideas of the committee to practical tests. It is believed that the information thus obtained will aid in correlating hardness, toughness and resistance to wear data now in hand. The next meeting of the committee probably will be held in Detroit or Cleveland.

Studies Coking of Coals in Pennsylvania

The regular Pittsburgh bed coal is a better low temperature coking coal than the upper Kittaning coal, according to J. D. Davis, fuels chemist of the bureau of mines and V. Frank Parry, research fellow of Carnegie Institute of Technology, Pittsburgh, who

have just concluded a research on "Low Temperature Carbonization of Pennsylvania Coals." The Pittsburgh coal, including the "rooster" coal, the lower roof, the upper roof, yielded low temperature coke of good domestic quality and a satisfactory quantity of low temperature tar. A total yield of 7.1 gallons of crude motor fuel oil per ton of coal coked was obtained.

The report mentioned above is one of four coal mining investigations conducted by Carnegie Institute of Technology, United States bureau of mines, and an advisory board of coal mine operators and engineers. The authors of the report conclude their findings as follows:

"The regular Pittsburgh bed coal is a good low temperature coking coal. When carbonized at 550 degrees Cent. in a stationary vertical retort, it will yield 33 to 35 gallons of tar, 3500 cubic feet of 600 B.t.u. gas, 1400 pounds of 10 per cent volatile coke, and 6 to 8 pounds of ammonium sulphate per ton.

"The Upper Kittanning coal is not a good low temperature coking coal. The coke is not dense, and the yield of by-products is low. This is a semi-bituminous coal with low volatile matter, and was not expected to yield much tar.

"Superheated steam has an effect upon the by-products of low temperature carbonization. The tars obtained were more viscous and contained a smaller amount of light oils and a larger amount of heavy oils. The amount of the by-products obtained by carbonizing with superheated steam was practically the same as without steam. The steam, however, prevented secondary decomposition to some extent."

Builds New Blooming Mill in France

A BLOOMING mill, said to be the largest in Europe recently was erected in the works of the Societe des Acieries de Longwy, France. This mill, which was built by the Maschinenfabrik Sack, G. m. b. H., Dusseldorf-Rath, Germany, is used for breaking down ingots into blooms either for a 38-inch two-high reversing shape mill located behind the blooming mill, or for other smaller section mills, and in addition serves as a slabbing mill for rolling slabs for plate mills.

The weights of the ingots to be rolled range from about 3½ to 12 tons depending upon the purpose for which they are to be used. The soaking pits are located in two parallel bays and the approach roller table extends into one of these bays. The ingot tilter is of the portable type in order that it may take ingots from either soaking pit bay and place them on the approach roller table.

Following are the principal dimensions of the new blooming mill:

	Inches
Diameter of rolls	46
Body length	120
Lift of top roll	40
Diameter of journals	26
Diameter of adjusting screws	16
Length of spindles	276
Diameter of pinions	50
Body length of pinions	60

The mill is driven by an electric motor having a torque of about 1,595,000 foot-pounds, the Ilgner system of control being employed. The pinion housare provided with an independent bearing surface which rests directly on the foundation. The mill housings are of ample dimensions. Each cast steel housing weighs about 60 tons. The screwdown gear of the top roll is operated by two variable speed electric motors of 85 horsepower each.

A feature of the mill is the hydraulically operated balancing gear of the top roll, the balancing operation being effected by a single hydraulic cylinder, which is fitted to the face of one of the housings. Owing to this design, the interior of the mill is accessible to the crane from above, an important consideration as regards repair work. Auto matic lubrication for the roll journals is provided by an oil pump, which is driven from the free end of the bot-

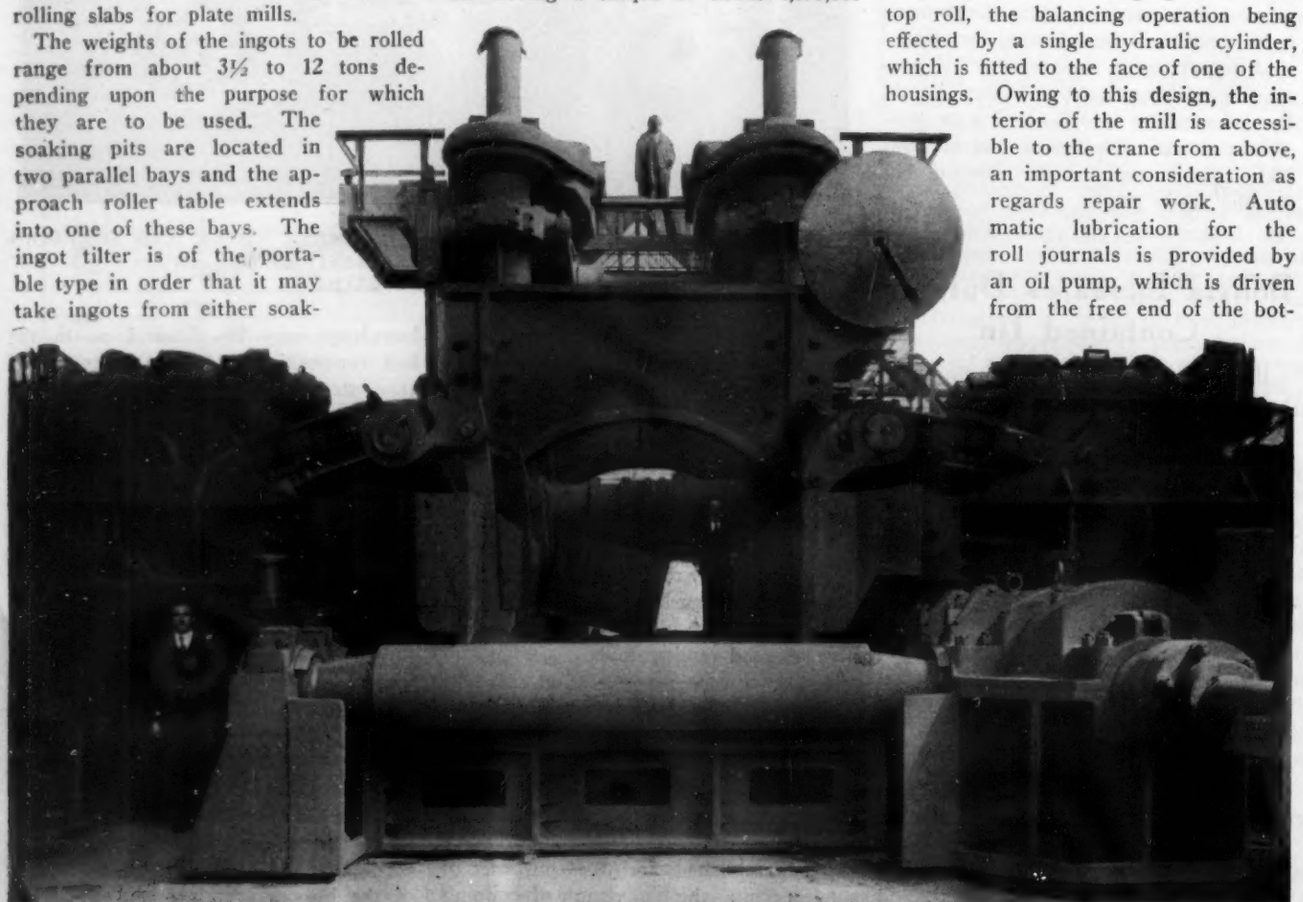


FIG. 1—FRONT VIEW OF NEW BLOOMING MILL RECENTLY INSTALLED AT THE SOCIETE DES ACIERIES DE LONGWY, FRANCE. IT IS SAID TO BE THE LARGEST IN EUROPE

tom roll. Provision has been made for the convenient replacement of the rollers between housings. The live roller tables before and behind the mill are of strong design, the rollers being of forged steel 22 inches in diameter, having journals of 10-inch diameter. Bevel gear wheels are enclosed in oil-proof boxes. The roller rack frames are of cast steel 40 inches high from bottom edge to middle of bearings.

The manipulator is provided with hydraulically operated guides. An electrically-driven tilter is mounted on each of the guides in front and at the rear of the mill housings. Slabs up to a width of 42 inches are tilted and properly held in place for edging. The guides are overhanging and no parts between the rollers are exposed to heat or roll scale. The rolled blooms go in a straight line from the mill on to the set of shears marked *A* in Fig. 2 when they are intended for being rolled into heavy sections in the same heat on the adjacent reversing mill.

When slabs are rolled, they are taken off the roller table by means of skids before they reach the shears *A*, and are transferred to a parallel table on which they are carried back to shears *B*, where they are cut to length. Behind the latter shears, pushers are installed for pushing the slabs aside and piling. Thence they are transferred either to the slab yard or to the reheating furnace of the plate mills.

Blooms for the smaller section mills pass in the same way through the shears *B* and move on to the shears *C* at the rear of which they are transferred by pushers and cranes either to the bloom yard or to the reheating furnaces. The shears *A* and *B* are exactly similar and are capable of cutting slabs up to 8 x 42 inches and blooms up to 20 inches square. The three sets of shears are each provided with a steam intensifier and fitted with two movable blades; after the top blade has descended on to the slab or bloom, the bottom blade effects the cut by moving upward. By this means the rollers in front and behind the shears can be kept at the same level. Besides the mechanically operated gages at the rear of the shears, suitable provision has been made for removing the crop ends.

A revision of the code for electric meters, approved by the American Engineering Standards committee in 1922, now is being arranged under the sponsorship of the Association of Edison Illuminating Companies, the bureau of standards, and the National Electric Light association. The work will include: 1. Detail specifications for laboratory and acceptance tests of watt-hour meters, ampere-hour meters, demand meters, current limiters, and current and voltage transformers; 2. analysis and summary of good practice for the installation of meters and auxiliaries; and 3. definitions of units and technical terms relating to metering.

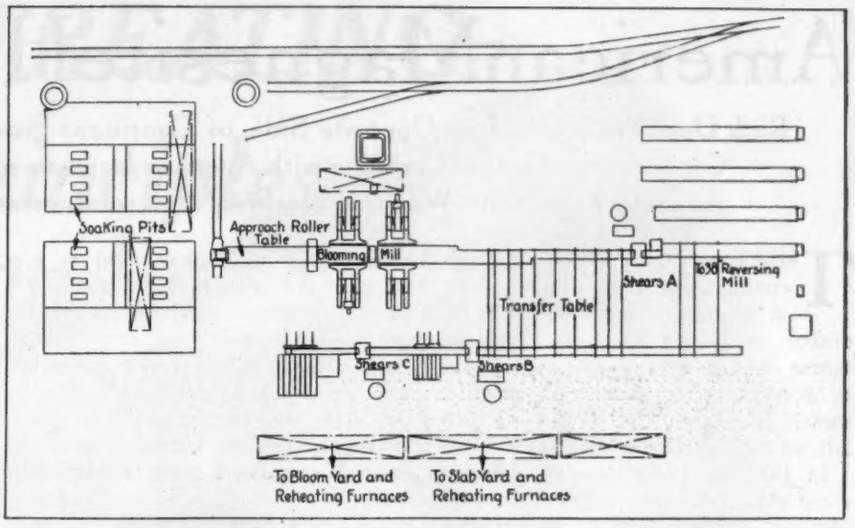


FIG. 2—AFTER INGOTS ARE BROKEN DOWN INTO BLOOMS IN THE NEW BLOOMING MILL THEY MAY PASS DIRECTLY TO THE SHAPE MILL OR MAY BE TRANSFERRED CONVENIENTLY TO ONE OF THE SMALLER SECTION MILLS

Outline Plan for Chamber of Commerce Meeting

Manufacturing problems will be considered at the forthcoming annual meeting of the Chamber of Commerce of the United States in Cleveland, May 6 to 8. A special group meeting of leading manufacturers will be held on the opening day under the auspices of the chamber's department of manufacture, of which E. W. McCullough is manager. This meeting will be devoted almost entirely to problems of particular interest to manufacturers.

The preliminary program for the group meeting includes the following subjects: "The Obligations of Employer and Workers in Successful Production," "The Simplification of the Government's Purchases," and "Industrial Pensions or the Care of Faithful Workers."

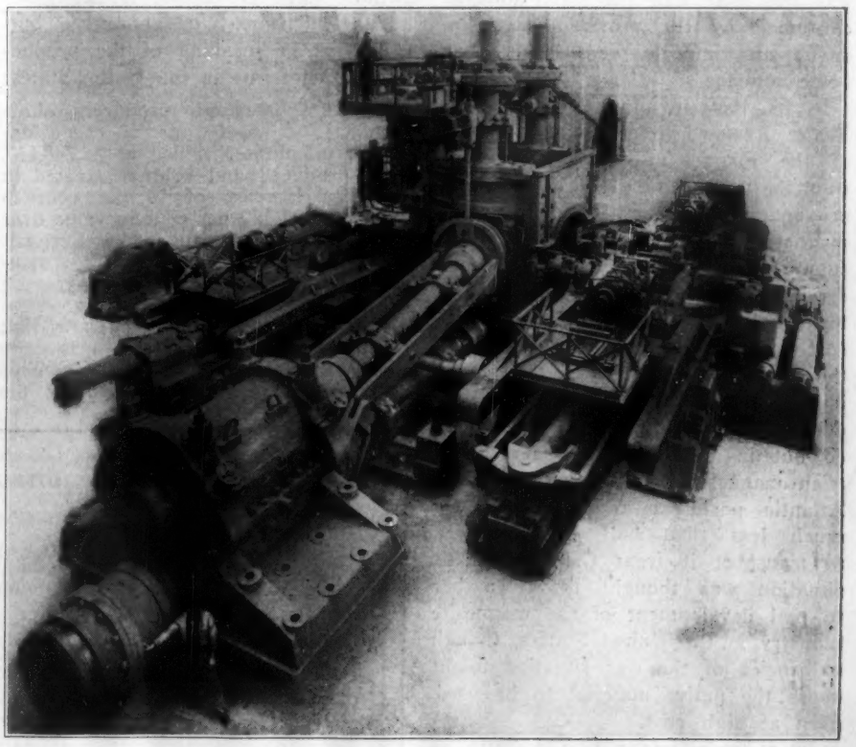


FIG. 3—THIS ILLUSTRATION SHOWS THE METHOD OF DRIVING THE MILL. AN ELECTRIC MOTOR HAVING A TORQUE OF 1,595,000 FOOT-POUNDS WILL FURNISH THE POWER

American Magnesite Handicapped

Rich Deposits Located on Opposite Side of Continent From Steel Plants of Principal Consumers—Cannot Compete with Austrian Imports—How Domestic Production Rose With War and Declined Since Importation Was Resumed

THAT the resources of this country not always are located in a way to serve best the industry needing them and that distances and freight rates are a bar to development of some resources is shown in graphic way by the rise and fall of the magnesite industry.

In 1913 the United States imported about 97 per cent of its approximate annual consumption of 300,000 tons of magnesite. In 1917 when European supplies were prevented by war conditions only 11 per cent was imported and the remainder was produced at home. In 1921 domestic production was less than half the small tonnage consumed by the prostrate steel industry and imports were larger than home tonnage.

In its issue of Jan. 6, 1916, IRON TRADE REVIEW presented a discussion of the magnesite situation resulting from the war having practically stopped production and shipment of Austrian magnesite, the principal source of supply for this country. While large deposits exist in Washington and California also has much magnesite the cost of transporting the material to the eastern section where the steel industry is located had prevented these deposits being worked. It was pointed out in this discussion that Austrian magnesite can be laid down at Atlantic ports at a freight cost of much less than half that required to transport it from California. This situation was thought to be a bar to real development of the magnesite industry in the United Stattes, though exigencies of the war situation might cause the native material to be used, even at high cost.

In a trade information bulletin of the department of commerce, mineral section, iron and steel division, a comprehensive statement of the magnesite situation of the world is presented. As a result of the world war a complete readjustment of the magnesite industry has come about. Austria to a certain extent controlled the world supply before that time but with the closing of this source of supply to the United States, the greatest consumer, great strides were made in developing the deposits in Washington and California. After supplying almost the entire needs of the country during the war when Austrian competition was missing, the weight of freight rates has caused the working of American deposits to dwindle until production is negligible.

The department of commerce bulletin says in speaking of the production of magnesite in the United States:

"Reports from all producers show that 303,767 short tons of crude domestic magnesite, valued at $2,748,150, were produced and sold or treated in 1920, an increase of 94 per cent in quantity and 120 per cent in value over 1919. Production and sales are not identical, because each year some magnesite is mined and for some reason or another remains unmarketed.

"Reports from producers show that much less crude domestic magnesite was sold in 1921 than in 1920. This marked reduction was caused by the entire cessation of work at the mines in Washington and partial idleness at those in California.

"Prior to the world war about 300,000 short tons of crude magnesite was consumed annually in the United States. About 10,000 tons was produced within the country and the rest, or 96 per cent was imported. Magnesite is imported in two forms, calcined and crude. It takes two tons of crude magnesite to make one ton of calcined.

"Fewer magnesite mines were worked in California in 1921 than in 1920. And even those mines that were generally productive show lessened output. The total output shows a decrease of 41 per cent and the value a decrease of 53 per cent in 1921 as compared with 1920.

"High freight rates to eastern markets and lack of demand caused general complaint among producers and somes of the mines were worked only intermittently. Producers almost universally agree that the magnesite mines in California cannot be worked at a profit in the face of large foreign imports. The duty levied on magnesite last year made only a small impression on the imports. Most of the mines in California were closed during the latter months of 1921 and the development of other deposits and the opening of new mines were stopped. All producers report very unsatisfactory business during the year. Nearly all the product from California is used as plastic material but the few mines that produce a natural ferromagnesite suitable for making brick and other refractory products report small business owing to the condition of the steel industry. Although some refractory brick can be made in California, the plastic products are especially needed for use in that state and in the smelting furnaces of plants in the country west of the Rocky mountains. California magnesite cannot compete with foreign magnesite in the Atlantic ports with present freight rates and high

(*Concluded on Page* 1058)

World Production of Crude Magnesite

Countries	1913	1919	1920	1921
	Metric Tons			
United States	8,740	147,005	275,571	43,458
Australia	7,220	9,772	6,919	12,770
Austria-Hungary	[1]200,947	.....	[1]120,347	.....
Canada	.....	9,020	28,159	4,521
Greece	118,054	62,408	79,323	54,024
India	16,462	17,401	14,577	20,338
Italy	600	35,930	33,850	9,410
Spain	958	120	1,214	.....

[1]Computed from the export figures on a basis of 2.1 tons crude to 1 ton sintered.

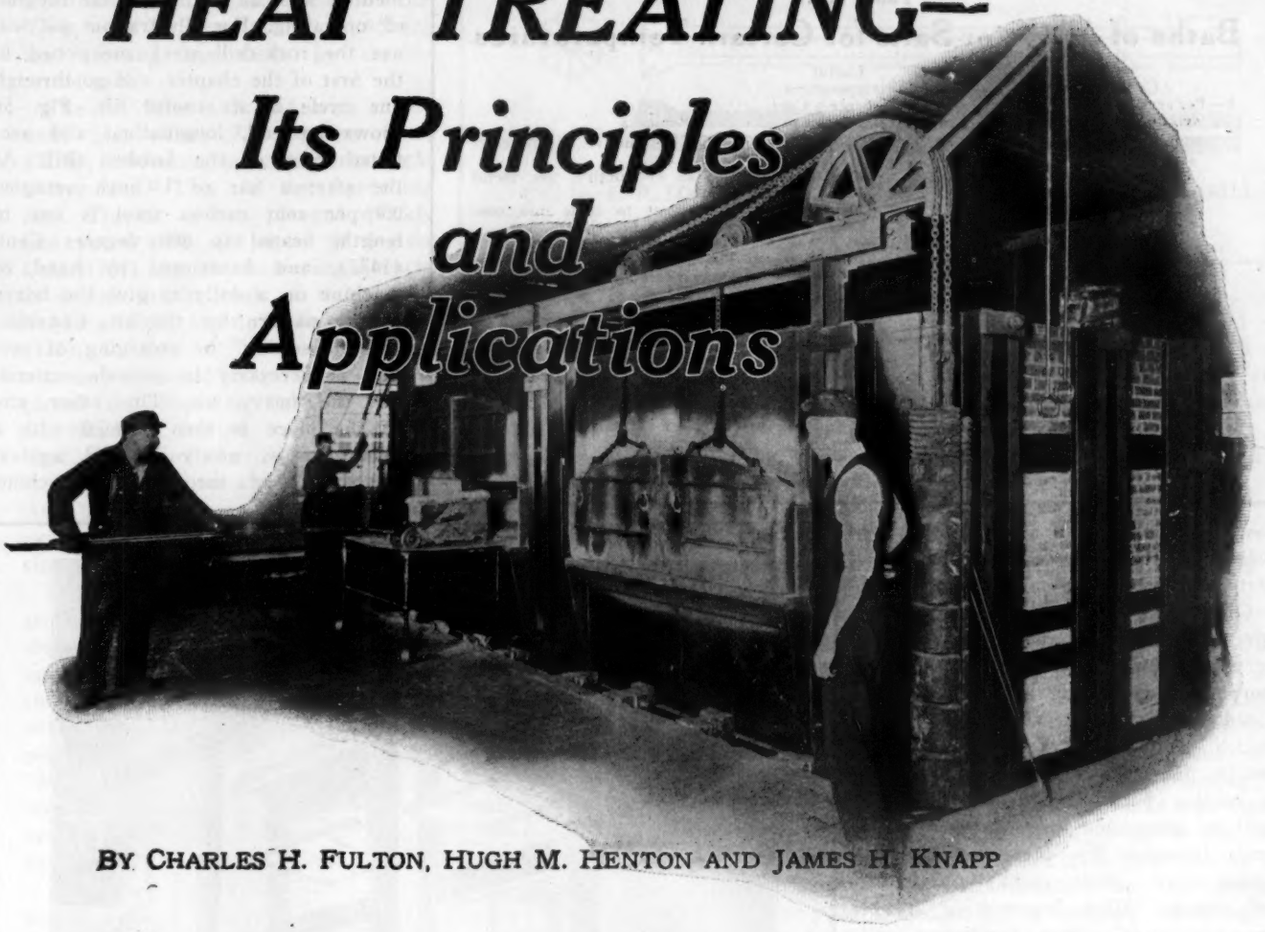
Crude Magnesite Consumed in the United States

(Net Tons)

Year	Domestic production	Imports	Total	Percentage of imports to total
1913	9,362	347,428	357,060	97
1914	11,293	256,988	268,281	95
1915	30,499	102,913	133,412	77
1916	154,974	93,885	248,859	38
1917	316,838	38,208	355,046	11
1918	231,605	43,530	275,135	16
1919	156,226	25,321	181,547	14
1920	303,767	63,110	266,877	17
1921	47,904	65,569	113,479	58
1922	.....	[2]153,292	.....	..
1923[1]	.....	[2]4,178	.....	..

[1]First nine months only.
[2]Does not include caustic calcined or dead-burned magnesite.

HEAT TREATING—
Its Principles and Applications



BY CHARLES H. FULTON, HUGH M. HENTON AND JAMES H. KNAPP

Chapter VI—Hardening and Tempering (Continued)

HEATS for tempering are much lower in temperature than those for hardening. Furnaces suitable for hardening or carburizing can be regulated for the lower temperature and in a measure can be made suitable for tempering. However, some furnaces designed for high temperatures do not give as even a distribution of heat at low temperatures, and it often is advisable to use a furnace of special design for tempering. Special tempering furnaces can be made of a less refractory brick, but the combustion chamber must be designed carefully to give uniform and evenly distributed heat.

The idea is widespread that in general liquids are more uniform than gases for tempering and heating. This is not true. If it seems to be true, it is because the liquid baths are well designed, well stirred and carefully manipulated while the tempering furnace used in comparison is poorly designed, poorly regulated or carelessly manipulated for uniform distribution of heat. An efficient tempering furnace, designed by good furnace engineers to meet the requirements of a particular size and kind of work, will heat uniformly at a lower cost than liquid baths. Air and gases are much more easily mixable and diffusible than liquids. A momentary accidental variation in the temperature of air or gas has less effect on the work than a similar variation for a liquid, because the air or gas is a poorer conductor.

A general view of tempering baths with ample hoods for carrying off fumes is shown in Fig. 53. Fig. 54 illustrates a single bath and gives an idea of the construction. The parts or tools to be tempered are placed in the wire basket. The oil, tallow, lead, potassium cyanide, nitre, soda ash, caustic soda, or some mixture of these is placed in the metal pot. An air or gas thermometer registers the temperature. Oil or gas, burning in the combustion chamber underneath, heats the pot indirectly, no direct flame striking it. The wire basket is placed in the pot, within which the tools or parts are held free from the sides or bottom. If lead is used, a wire screen is necessary, fastened above the tools to keep them from floating.

Tempering for the proper release of hardness may be carried to varying degrees of completeness. The further the tempering proceeds toward normalizing and annealing, the higher the temperature necessary. The principal feature of liquid tempering baths is the possibility of maintaining a given minimum or maximum temperature

Tempering in Liquid Salts and Alloys

TEMPERING is discussed in this, the second installment of Chapter VI. Chapter I of the series appeared Oct. 4; Chapter II was published in the issues of Oct. 18, Nov. 1 and Nov. 15; Chapter III in the issues of Nov. 29, Dec. 13 and Dec. 27; and Chapter IV in the issue of Jan. 10. Chapter V appeared in the Jan. 24, Feb. 7, Feb. 21, March 6 and March 20 issues. The first installment of Chapter VI appeared April 3.

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Table XIII

Baths of Alloys or Salts for Certain Temperatures

Constituents A—Per cent by weight	Constituents B—Per cent by weight	Melting point degrees Cent.	Useful temperatures degrees Cent. possible	Remarks
Common salt	....	802	805—1000	Fumes destructive to fire clay.
....	Sodium sulphate	835	890—1000	Not so destructive, use metal pots.
77%	23%	725	730—1000	Fumes not to come into contact with fire clay.
50%	50%	625	630— 900	Lowest melting combination.
27%	73%	740	750— 950	Not corrosive to metal.
Potassium nitrate	....	340	350— 650	Decomposes before boiling.
....	Sodium nitrate	310	315— 630	Do not overheat.
78%	22%	260	265— 700	Good temper bath.
54%	46%	220	225— 650	Lowest melting.
23%	77%	285	290— 650	Overheating breaks up the salt.
Antimony	....	630	635— 800	Cover metals with charcoal.
....	Lead	326	330— 700	Oxidizes rapidly if overheated.
35%	65%	400	405— 700	Good for normalizing.
13%	87%	246	250— 700	Lowest melting alloy.
55%	45%	500	505— 750	Lighter in weight than straight lead.

easily by means of an infallible indicator in the form of a decided property of the metal, salt, or oil used.

Oils reach their flash point at a given temperature which maximum serves to prevent steel for a given purpose from being overtempered. Lead melts at 327 degrees Cent. (620)* which serves as a decided minimum which the eye will quickly detect in a cooling bath, and below which it will be impossible to cool without the bath freezing. Tin melts at 232 degrees Cent. (450) and combinations of metals called low-melting alloys may be used where conditions call for low tempering heats. Salts of different metals may be used in various combinations. Common salt melts at 805 degrees Cent. (1477) and therefore cannot be used alone for tempering, but is used in pots for the hardening heat. Sodium nitrate melts at 312 degrees Cent. (593) and mixtures of it with common salt can be used for alloys which take the high temper. The compositions for baths which melt at stated temperatures are given in Table XIII. The boiling points or decomposition temperatures limit overheating. This enables the maintenance of any temperature between, depending upon requirements. Metals and alloys like lead and zinc, which oxidize readily at the higher temperatures, must be kept covered with charcoal. Pots and pot furnaces such as shown in Figs. 54 and 55 may be used for either the tempering or hardening heats, the suitable liquid alloy or salt filling the pot. The pots are either circular or rectangular in section and designed of special metal to withstand the corrosion of the hot liquid. Special design of heating chamber and special refractories allow higher temperatures.

The preceding description of furnaces and appliances should be supplemented with an outline of the method of operating. For illustration we will use the rock-drill steel, mentioned in the first of the chapter, and go through one cycle in its useful life. Fig. 56 shows an end, longitudinal and sectional view of the finished drill. At the start a bar of 1¼-inch octagon, 0.9 per cent carbon steel is cut to length, heated to 800 degrees Cent. (1472), and hammered by hand or machine on a dolly to give the heavy rosette pattern for the bit. Considerable "upsetting" or enlarging of section is necessary to provide material for the heavy bit. The other end of the piece is then formed with a collar to fit nicely in and against the chuck of the drilling machine.

FIG. 53—TEMPERING BATHS AND HOODS IN A WELL DESIGNED HARDENING AND TEMPERING DEPARTMENT

*Figures in parenthesis represent temperature in degrees Fahrenheit.

Through the center of the steel runs a circular channel for water or air. This must be kept open all through the dressing operations by an inserted rod.

The bit then is heated with others until just above 720 degrees Cent. (1328), evidenced by a uniform bright cherry red. This is the hardening heat. The bit now is plunged quickly into warm water (at about 40 degrees Cent.)(104), for the hardening quench. It is left in the tank of water until it has attained about 50 degrees Cent. (122). It now is in a fine-grained martensitic condition. Next it is placed in tempering bath of heavy oil which is heated to 225 degrees Cent. (432) and the bit is held there for twenty minutes and then removed. Any bright place on the bit may be examined, and should show a dark straw color.

Under the microscope, a polished section will show a large amount of troostite with little martensite. This indicates a correct temper. The bit should give heavy blows against rock without cracking or battering. A properly hardened and tempered drill bit "wears out," that is, dulls after a time, but neither batters, due to softness; nor breaks, due to too great hardness of the steel composing it.

The shank, shown in Fig. 56 is heated uniformly to 720 degrees Cent (1328) and quenched in a light oil bath at 70 degrees Cent (158) then tempered at 300 degrees Cent (572) in a tin bath or very heavy viscous oil bath for fifteen minutes. Microscopically it is troosite and martensite and sorbite ofter tempering. It withstands rapid blows from the hammer of the drilling machine, upon the blunt end of the shank, as the drill steel and bit are driven against the solid rock.

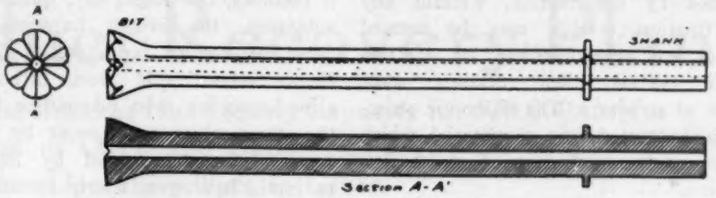


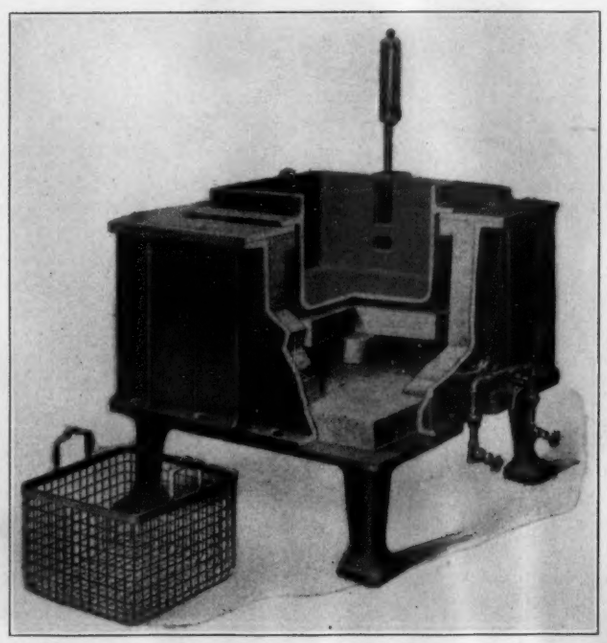
FIG. 56—END, LONGITUDINAL AND SECTIONAL VIEWS OF ROCK DRILL STEEL SHOWING SHANK, STEM AND BIT

The dressing heat and the hardening heat should reach only the bit in the one case, or the shank in the other, and not the main stem of the piece. Otherwise the stem will become coarse-grained from the dressing heat, and then hardened from the hardening heat and quench, leaving it in a hard, brittle condition, where it should be vastly softer and tougher. The steel for the whole piece should be well normalized and fine grained to begin with. If it does become coarse-grained from the dressing heat extending too far back on the stem, it must be grain refined and normalized before hardening and tempering.

Hollow steel, like above, is harder to dress, but more easily heat treated than solid steel of same diameter, because the heating and quenching are both more uniform. There is here no danger of an untreated center which sometimes occurs in solid steel. Hollow tools or parts which have to be hardened throughout a considerable length must have a rapid stream of quenching fluid forced through the central channel or it will be left unhardened in part.

Microsocope May Aid in Cold Treatment

Sir Robert Hadfield presided as chairman at a recent meeting of the Royal Microscopical society held in London, the purpose of the meeting being to discuss the industrial applications of the microscope. In his opening remarks Sir Robert pointed out that the microscope should be useful for studying further the cold treatment of steel, in contradistinction to heat treatment. Ordinarily, he said, on submitting steel to stresses which produce deformation although the crystallization may be elongated or otherwise distorted, there is not what may be termed a chemical change, whereas in manganese steel there is



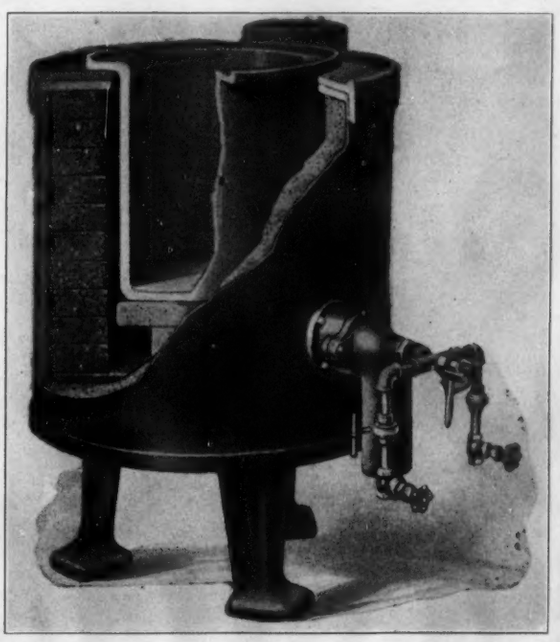


FIG. 54—SECTIONAL ILLUSTRATION OF A TEMPERING BATH FURNACE SHOWING CONSTRUCION. FIG. 55—A HARDENING OR TEMPERING BATH POT FURNACE

produced by deformation, without any heat treatment, what may be termed changes of crystallization, or if this is not correct, then certainly some change of structure. The austenitic structure is converted into a material which appears to possess a type of martensitic structure.

In this change there is, without any chemical action of heat treatment, a most remarkable alteration in the physical properties of the material. Simply by stress the material is strained until it becomes, one might say, quite another substance, the brinell hardness rising from 200 to not far short of 600. Yet if we submit mild steel, carbon steel, alloy steels, or even manganese steel, to the stress which must occur by the low temperatures represented by liquid air or liquid hydrogen, nearly absolute zero, there is no apparent change in the physical structure. In this respect the microscope is of the utmost service in enabling a study of these changes to be made.

Leviathan Propeller Weighs Over 20 Tons

MANY records have been broken in the construction and refitting of the United States steamer LEVIATHAN and now comes the newest record, that of casting a spare bronze propeller calling for the pouring of 54,500 pounds of metal into a single mold. There are few plants in the country, probably few in the world, where such a heavy bronze casting could be turned out, and it may cause surprise to some to learn that one of these few plants is located in the little town of Bath, Me. The Hyde Windlass Co. has specialized on bronze work for many years and gradually has built up its facilities for turning out larger and larger work. Previous to the casting of the big LEVIATHAN spare propeller, this plant had turned out several propellers of as large or larger diameter, but not approaching it in weight.

The propeller of the LEVIATHAN is 16 feet 6 inches in diameter and weighs approximately 40,000 pounds in its finished state and is believed to be the heaviest propeller made in this country.

Some idea of the size of the casting may be gained from the accompanying illustrations. The bore is 20 inches and in one of the views, a standard 10-inch launch propeller is shown inside the bore.

A wooden pattern for one blade carefully was made up from blue prints, and after this was finished and approved, it was firmly mounted on a spindle free to swing 360 degrees and yet held at all times at the same angle with respect to the horizontal. One blade was molded at a time, the pattern being swung through exactly 90 degrees after each impression. Care was taken in setting the pattern each time to insure equal spacing and uniform pitch. The specifications gave small tolerance in the rough casting. In pouring the mold, test bars were precasted to determine quality of the molten metal and later test bars were cut from the casting itself and tested by the American Bureau of Shipping. Results in all cases were satisfactory. When lifted from the mold the surface of the large casting was as smooth as the surfaces of small launch propellers continually turned out at this plant. However, despite the smoothness of the casting, considerable time was required to finish the propeller as it had to be chipped and ground to a true pitch, and all the surfaces ground to a good finish. The rough casting was finished by air chippers and portable grinders. The grinders used were some designed and built in the Hyde shops. Two sizes of wheels were used, 6 inches and 8 inches in diameter and the work of grinding took several days for a gang of five or six finishers. As the grinding neared completion the propeller was placed on steel supports as shown in Fig. 2 for the purpose of balancing, and additional metal here and there was taken off until the balance was such that a slight touch would turn the propeller completely over.

FIG. 1—OVER 54,000 POUNDS OF METAL WERE REQUIRED TO PRODUCE THIS CASTING. FIG. 2—THE FINISHED PROPELLER IS BALANCED SO THAT A SLIGHT TOUCH WOULD TURN IT OVER COMPLETELY

Build By-Product Recovery Plant

New Equipment of Independent Steelmaker Has Hourly Capacity for 570,000 Cubic Feet of Gas and Conversion of Over 200 Gallons of Light Oil Into Pure Products—Operating Data Is Given

BY C. H. HUNT

IN THE first installment of the article describing the new by-product coke plant recently placed in operation by the Weirton Steel Co., Weirton, W. Va., the discussion was confined to a description of the new narrow-type, rapid coking ovens producing blast furnace coke from high-volatile coal exclusively. This, the final installment, will deal with the recovery of by-products, describing the equipment and methods which are in use.

The by-product department is laid out parallel with the battery along the south side of the plant, the benzol department being located west of the by-product buildings adjacent to the river bank. All buildings and equipment have been constructed so that extensions can be made and apparatus added to handle gas from additional batteries of ovens without delay to existing operations. The present equipment is designed for a capacity of 570,000 cubic feet of gas per hour and at the benzol plant for the conversion of 200 to 230 gallons of light oil per hour into pure products.

The first installment of this article was presented in the April 10 issue of IRON TRADE REVIEW. The author is chief engineer, Weirton Steel Co., Weirton, W. Va.

Pump Location Simplifies Piping

All buildings are of steel frame and buff brick construction with steel window sash and steel doors and smooth finished concrete or asphalt platforms and floors. The by-product building is 133 feet long, 59 feet wide and 32 feet high to the bottom chord of the roof truss, 40 feet of the west end being separated off by a brick partition providing storage for ammonium sulphate. One of the novel features of the layout is the location of all by-product department pumps, service water pumps and air compressors in a room 42½ x 19 x 9½ feet, beneath the primary coolers, the walls and roof of which are extra heavy and constructed of reinforced concrete with reinforced beam construction and pilasters under each cooler. The pumps were thus located to facilitate ease of extension to both ends of the by-product building for the addition of apparatus on the east end and additional sulphate storage on the west end; this arrangement also has the advantage of simplifying and shortening the pipe lines to and from the pumps.

Gas from the collecting main at the ovens is drawn through the suction main into a 36-inch downcomer, connecting with the inlet header at the primary coolers. Three primary coolers of the tubular type are provided, two operating in parallel and one as a spare in which the gas is cooled by contact with the water cooled tubes from 185 to 70 degrees Fahr. Temperature controlled diaphragm motor valves maintain a necessary uniform temperature of the gas leaving the coolers, by controlling the

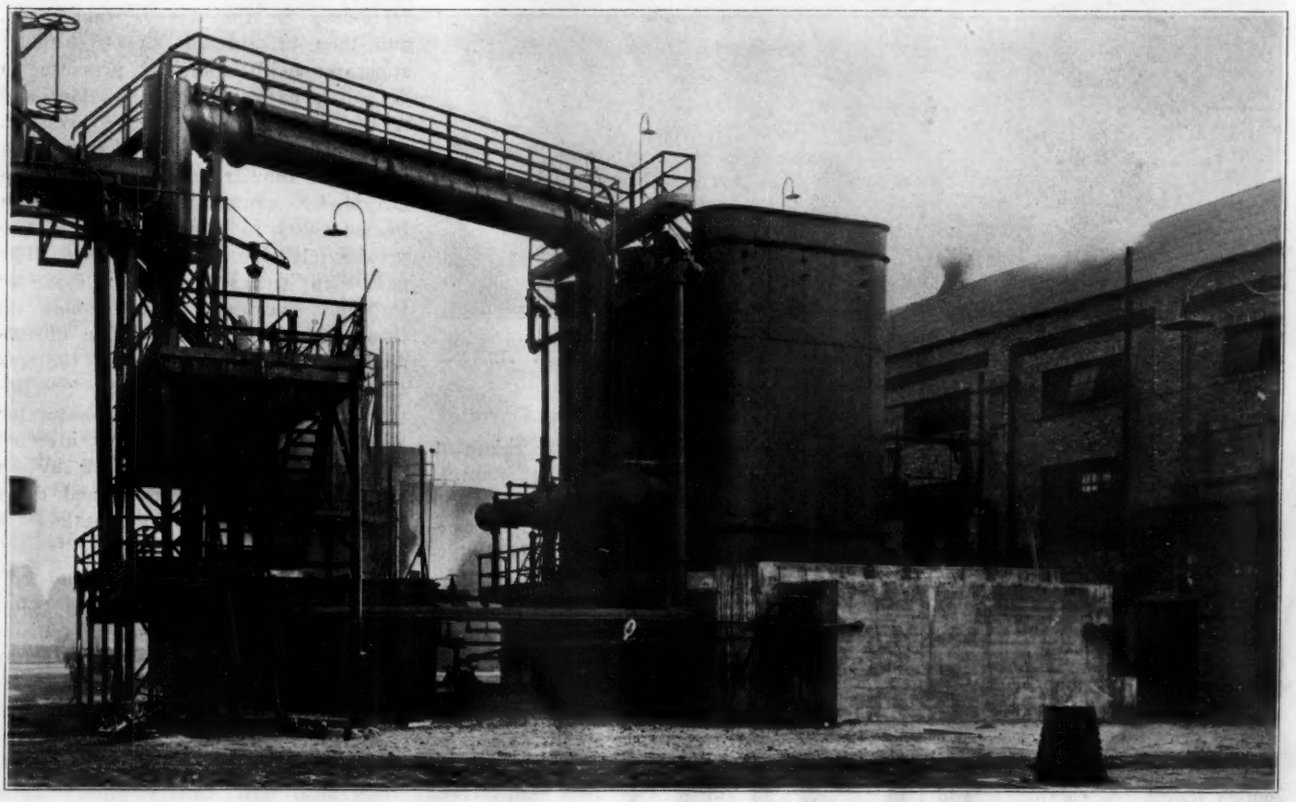


FIG. 5—PRIMARY COOLERS, SHOWN IN THE CENTER, REST ON A CONCRETE STRUCTURE WHICH HOUSES ALL BY-PRODUCT PUMPS, WATER SERVICE PUMPS AND AIR COMPRESSORS. GAS COLLECTING MAIN AND HOT DRAIN TANK ARE SHOWN AT LEFT

amount of water flowing through the coolers. About 90 per cent of the tar is condensed out of the gas by spraying with cool liquor in the collecting main and in passage to the coolers, while the lighter tar and water vapors are condensed in the primary coolers. This water carries with it about 20 per cent of the ammonia in the gas forming what is termed ammonia liquor, the tar and ammonia liquor flowing into a 20,000-gallon hot drain tank located north of the primary coolers.

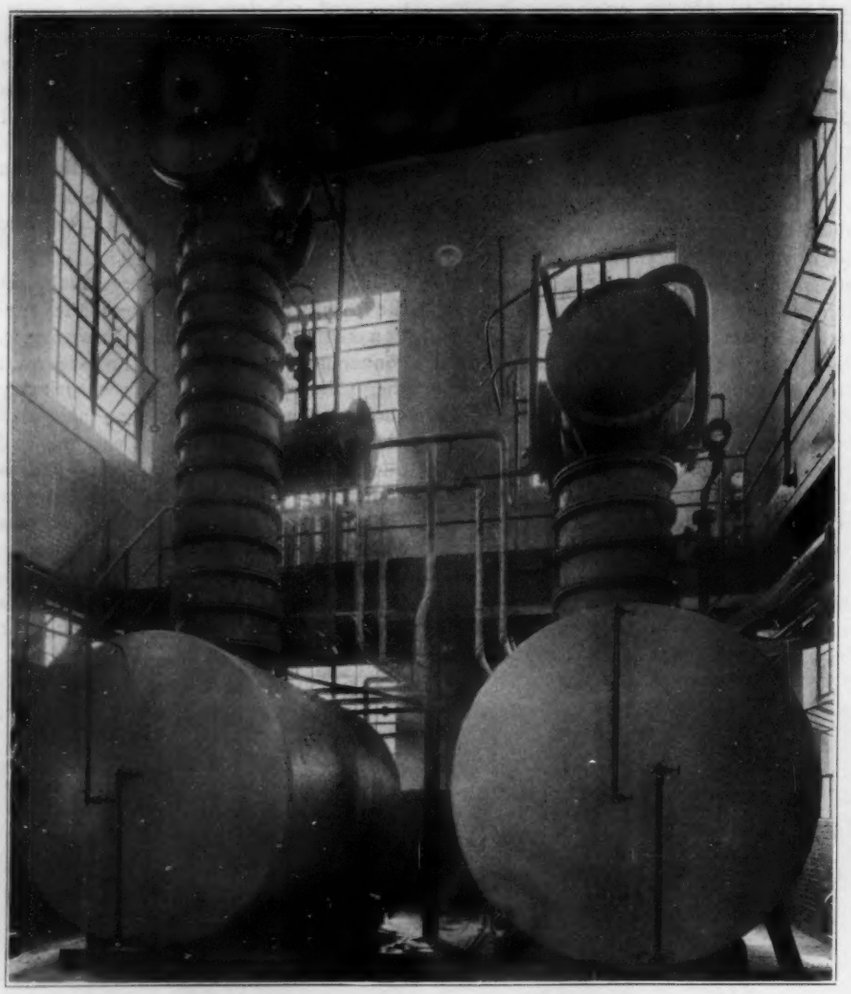


FIG. 6—VIEW OF THE CRUDE AND PURE STILLS IN THE BENZOL BUILDING. COOLERS AND RECEIVING TANKS ARE LOCATED ON PLATFORMS IN THE REAR

Two centrifugal motor-driven tar flushing pumps, one held in reserve, located in the pump house having a capacity of 670 gallons per minute, each at 125 feet head, are provided. These pumps circulate tar and ammonia liquor from the hot drain tank to the sprays in the collecting main, the circulating liquor returning to the hot drain tank. The amount condensed out of the gas in the mains, which together with the tar and liquor from the primary coolers and tar extractors, is pumped by either of two motor-driven centrifugal ammonia liquor pumps of 100 gallons per minute capacity at 75 feet head, to a separating tank of 45,000 gallons located east of the by-product building. Here the tar is separated from the ammonia liquor by difference of specific gravity, the ammonia liquor flowing to the weak liquor storage tank of 70,000 gallons capacity for further treatment, and the tar into a 300,000-gallon storage tank from which it is loaded into tank cars for shipment or for use as fuel at the steel plant.

It will be noted that the hot drain tank is located above yard level, instead of in a pit, with its steel platforms level with the top around the pitch traps and strainers, so it can easily be kept clean, thus eliminating one of the unsightly places around the coke plant and allowing the tar flushing pumps to operate with suction head and be located above floor level in the pump house, which is only 18 inches below yard level. Therefore, to receive the drain from the tar extractors, reheaters and exhausters, which are at floor level in the by-product room, and, also the overflow from the tar and ammonia tanks, etc., a 5000-gallon concrete condensate drain tank is provided below yard level with two 6 x 5¼ x 6-inch horizontal double-acting steam pumps, one being a spare, controlled by a float in the condensate tank for transferring the tar, etc., to the hot drain tank.

All Pipes in Trenches

All pipes for tar and ammonia liquor are laid in covered concrete trenches which also drain to the condensate drain tank, thus returning leakage or spillage from pipes or apparatus. Two lines of apparatus are provided in the by-product room, one of which has sufficient capacity to handle all of the gas, the other held in reserve. The exhausters are of the positive type and have a capacity of 11,700 cubic feet per minute at inlet temperature of 1100 degrees Fahr. They are designed for a suction of 10 inches of water and a discharge pressure from 2½ to 3½ pounds. They are driven by 16 x 22-inch, four valve, nonreleasing corliss engines, designed to operate from 135 to 175 revolutions per minute against 15-inch back pressure or atmospheric exhaust.

Gas is drawn from the ovens through the mains and coolers by the exhauster and then driven through a rigid three bell-type tar extractor where any tar remaining in the gas is taken out, and then on through the by-product apparatus with sufficient pressure to deliver it back to the gas holder and to the ovens at the required pressure. From the tar extractor the gas passes through a tubular reheater and is preheated by contact with the steam heated tubes to a temperature of approximately 140 degrees Fahr. The gas then enters a 10-foot diameter lead-lined saturator and bubbles up through a 5 per cent solution of sulphuric acid, the ammonia in the gas uniting with the acid and precipitating to the bottom of the saturator which has the shape of an inverted cone from which it is lifted by an air injector on to a lead lined drain table the acid draining back into the saturator.

The sludge of salt crystals and acid then are whirled in a perforated cylindrical dryer forcing out the remaining acid which flows back into the saturator. After being washed with a small quantity of hot water and whirled until dry, the white soft crystals are scraped from the cylinder by mechanical salt cutters into buggies below the platform on which the drain table and dryers are located, ready

for storage or shipment. The weak ammonia liquor is delivered from the storage tank to the ammonia still by one of two motor-driven centrifugal pumps, having a capacity of 100 gallons per minute. Here it is mixed with milk of lime and heated by steam which drives off the ammonia as a gas. The gas is piped into the gas main just before it enters the saturator and is converted into ammonium sulphate.

From the by-product building, the gas is piped into the benzol washers, first passing through the final cooler, 8 x 70 feet, of the hurdle type, where sprays of water cool the gas from 120 to 70 degrees Fahr. and remove the napthalene of which little is encountered with narrow ovens and rapid coking. To maintain the gas at a constant temperature, a Taylor type control valve admits the proper amount of cooling water through the inlet line. The gas then passes in series through the two cylindrical washers each 10 x 100 feet containing wooden hurdles for about 85 feet of their height. As the gas flows upward through the hurdles, composed of wooden slats set on edge, a petroleum wash oil is sprayed in at the top of the washer running over the entire area and surface of the hurdles from top to bottom. The gas is broken up thoroughly and brought in contact with the wash oil which absorbs all the benzol vapors, the usual practice being to keep the amount of benzol absorbed between 2½ and 3 per cent of the wash oil.

The gas then freed from all by-products flows to the gas holder. Less than 35 per cent is required for heating the ovens, the remaining 65 per cent being available as surplus gas which is delivered at 5 pounds pressure to a system of mains supplying gas to the mills. This is accomplished by a positive-type rotary gas booster located in the by-product room and having a capacity of 6200 cubic feet per minute under inlet conditions of 80 degrees Fahr. The booster is driven by a nonreleasing corliss valve engine, a duplicate of the engine driving the exhausters. One of the exhausters also is connected with the mill line to serve as a spare for the booster.

Vapors Are Distilled

The wash oil enriched with the benzol and its homologues is pumped to the wash oil still at the benzol plant, first passing through the vapor to oil heat exchanger where it is heated by benzol vapors and steam from the wash oil still, then to the oil to oil heat exchanger receiving heat from the hot debenzolized wash oil leaving the still. It is then further heated to the required temperature of about 300 degrees Fahr. in two final heaters and enters the wash oil still, 7 feet in diameter containing 27 trays, in which the heated oil flows down through the still while steam admitted at the bottom travels upward distilling out the benzol vapors. These benzol and water vapors are condensed partially in the upper part of the still and then further condensed in the vapor to oil heat exchanger by indirect contact with the incoming cold enriched wash oil. The final condensation and cooling is accomplished in a water cooled condenser or light oil cooler, 3½ feet in diameter by 24 feet high. The benzol condensate, termed light oil, is separated from water in the condensate in the light oil separator, 3 feet in diameter by 11 feet high, and flows to a 20,000-gallon light oil storage tank.

The wash oil after leaving the oil to oil heat exchanger finally is cooled by the wash oil cooler, consisting of 10 banks of pipe cooled by water flowing over them, and then pumped again to the benzol washer completing a continuous cycle of circulation. There are five wash oil circulating pumps of the positive cycloidal type all iron fitted, each having a capacity of 7500 gallons per hour. They are individually driven by 7 x 6 vertical engines at 350 to 450 revolutions per minute, one serving as a spare, located in a leanto of the benzol building. The heat exchangers of this system effect a large saving both in steam necessary for distilling off the light oil and also in water required for cooling the wash oil. The benzol building is 31 feet long 51 feet wide and 42 feet high to the bottom chord of the roof, with a pump room leanto 15 feet wide by 31 feet long, and is designed for extension in the future. In addition to the light oil apparatus, the building contains a crude still and a pure still, the still tanks being 9 feet diameter by 13¾ feet long, each with a working capacity of 7000 gallons.

Light oil, which shows a distillation test of 93 per cent at 200 de-

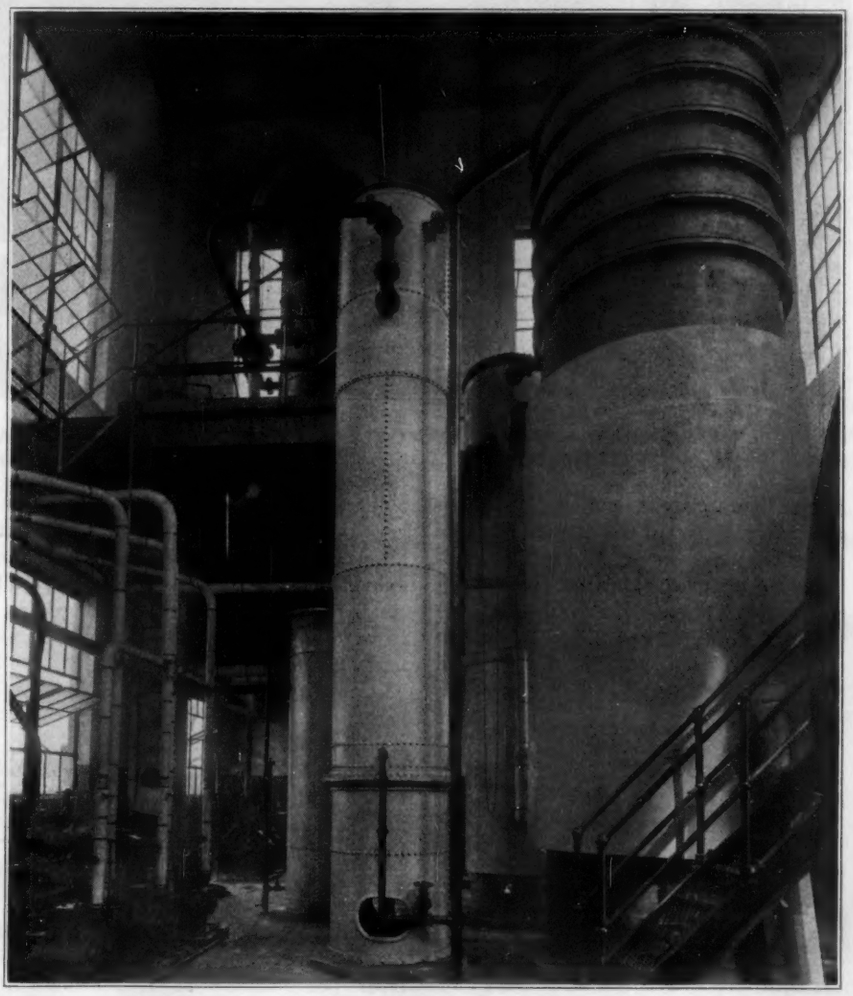


FIG. 7—WASH OIL STILL IN THE BENZOL BUILDING WITH FINAL HEATERS IN REAR. THE CHARGING AND LOADING PUMPS ARE SHOWN AT THE LEFT

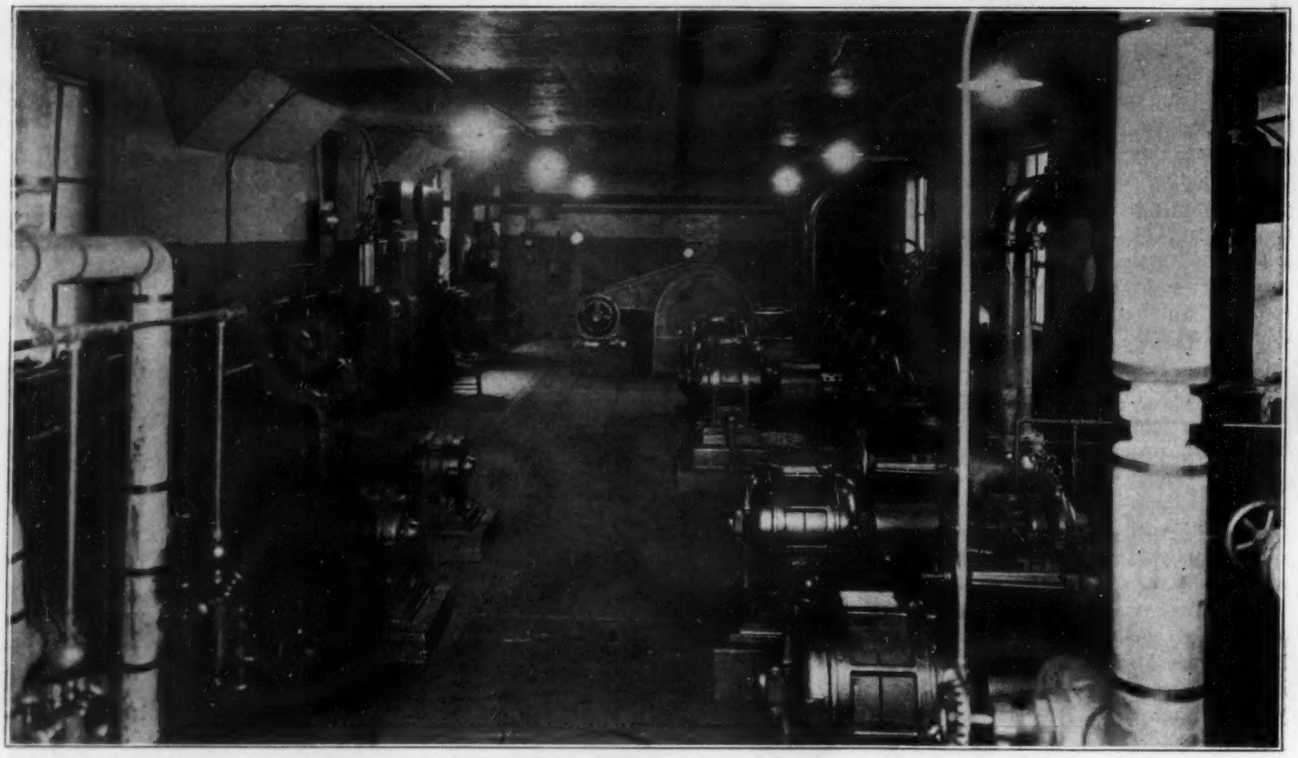


FIG. 8—PUMP ROOM UNDER PRIMARY COOLERS. THE BY-PRODUCT PUMPS ARE IN THE FOREGROUND, THE WATER SERVICE PUMPS BEYOND AT THE RIGHT AND THE AIR COMPRESSORS AT THE REAR

grees Cent., is washed by mechanically mixing with 66 degrees Baume sulphuric acid in a 4500-gallon agitator to remove impurities, principally clefines and phenoloides and then agitated with caustic soda solution to neutralize the acid. The purified light oil then is charged in the crude still and about 92 per cent of the benzol and its homologues distilled off by the application of steam in heating coils in the still tank, leaving a residue of napthalene and wash oil. Two cooling pans, 6 x 16½ x 2 feet, receive the residue and serve to crystallize out the naphthalene, the wash oil being returned to the wash oil system. The benzol vapors from the still are condensed and cooled by tubular condensers and coolers, three fractions are made—crude benzol, crude toluol and crude solvent naphtha. These crude products then are separately redistilled in the pure still without further treatment, the vapors condensed and cooled making nitration benzol, nitration toluol and nitration zylol—all of these products as finished being absolutely noncorrosive to copper and silver. A small amount of intermediates remaining in the still fulfill the specifications as 90 per cent benzol.

No Steam Generating Capacity Added

Steam for the operation of the plant is furnished from the main boiler plant of the tin plate department, where sufficient generating capacity was available without additions, and is conveyed to the benzol and by-product plants by a 6-inch overhead line. The exhauster and booster engines, all small steam engines and pumps exhaust into a common 8-inch exhaust line, connecting the by-product and benzol plants, furnishing sufficient exhaust steam for the requirements of the reheater and line still in the by-product plant, and for the wash oil still at the benzol plant. Provisions are made for returning the excess exhaust steam to the tin mill power station nearby for heating boiler feed water.

Water for the coke plant is received from the large service main from the river pump house 88 feet below the plant level, which parallels the south side of the plant. Two motor-driven centrifugal pumps, one being a spare, located in the by-product pump room and having a capacity of 2000 gallons per minute, boost this water from 40 to 125 feet total head for the general purposes of the plant. Electric current is supplied from the main plant transmission system to a substation at the coke plant at 6600 volts, 60 cycle and is stepped down by three 333 kilowatt-ampere transformers which furnish current at 550 volts for all coal and coke handling and pump motors, and for two 150-kilowatt direct-current motor generators which furnish power to the oven machinery.

All main transmission lines from the substation to the points of distribution are laid in underground conduits encased in concrete; all exposed lines are laid in pipe conduits and the motors are totally enclosed to exclude all dust. The substation is of brick and concrete construction, 34 feet wide by 45 feet long, and houses the high-tension transformers, lightning arresters, 23,000 volt oil circuit breakers mounted in brick cell structures, the two motor-generator sets and the main control and distributing switchboard. The adoption of 550-volt power for all alternating current motor drives simplified the installation and effected marked savings in the initial cost and has proven entirely satisfactory in operation.

Excess Gas Is Consumed

Surplus gas is used at the tin mills for all annealing, for the annealing furnaces and galvanizing pots at the sheet mill and for part of the annealing furnaces at the strip mills. A gas main also connects with the open-hearth plant, gas being used for heating the mixer and for drying the ladles and steel runners. All open-hearth furnaces are piped for gas and tar burning so that any surplus not required at the other plants and at week ends when they are not operating, can be used in the open-hearth furnaces, eliminating all bleeding of gas. The total surplus gas is metered at the coke plant and also to each department using it. Regulating valves

at each department maintain the pressure required at each plant. The gas as applied has replaced producer gas or coal firing and has substantially increased the efficiency and reduced costs at these departments.

Plant Built Quickly

The plant was built in remarkably short time. Construction work was started Nov. 1, 1922, and despite the bad weather and delays during the winter months, the plant was ready for operation July 1, 1923, in accordance with the original date set for completion—just eight months after the beginning of construction. The plant equipment was designed and constructed by the Koppers Co. in collaboration with the engineers of the Weirton Steel Co.

The ovens were brought up to heat and the first coke pushed July 7, 1923, and the ovens have operated continuously on 11 hours and 26 minutes coking time, carborizing 1060 tons of coal per day or 29 tons per oven per day without any leaks developing in the brickwork or overheating in any portion of the battery and establishing a new record for short coking time and production of blast furnace coke from a like number of ovens. All coke from the plant has been used at the blast furnace and only the coke which passes over the 1¼-inch rotary grizzly screen is classed as furnace coke and sent to the furnace, the coke passing through the screen being separated, the nut coke being sold as domestic coke on the market and the breeze used at the soaking pits and burned under steam boilers.

Average operating results at the new by-product coke oven plant during December, 1923 and for the first 21 days of Janauary, 1924, are listed in Table II. The debenzolized gas has an average of 590 B.t.u. The tar is of low specific gravity, rich in creosote and anthracene oil, high in tar acid approaching tar produced by low-temperature coking processes and is in demand for creosoting and wood preserving purposes. The sulphate is of good standard grade with large pure white crystals. The benzol plant was originally intended for the production of motor benzol, however, additional tanks have been added and changes made so that all of the product is now being made exclusively into nitration benzol, nitration toluol and zylol.

Table II

Yield from High Volatile Coals

	December, 1923	Jan. 1-21, 1924
Gross coking time	11 hrs. 46 min.	11 hrs. 46 min.
Net coking time	11 hrs. 26 min.	11 hrs. 26 min.
Coal per oven per day	28.7 tons	.....
Furnace coke per day over 1¼-inch revolving grizzly	661 tons	.....
Total coke yield—per ton of coal	75.75 per cent	75.49 per cent
Furnace coke yield—per ton of coal	63.07 per cent	63.24 per cent
Domestic coke yield—per ton of coal	6.98 per cent	6.33 per cent
Breeze—per ton of coal	5.70 per cent	5.92 per cent
Total gas yield—per ton of coal	11,360 cubic feet	11,790 cubic feet
Tar yield—per ton of coal	12.37 gallons	13.13 gallons
Sulphate yield—per ton of coal	25.21 pounds	25.50 pounds
Light oil yield—per ton of coal	4.03 gallons	4.10 gallons
Surplus gas	.....	63 per cent
Average analysis	Coal, per cent	Coke, per cent
Moisture	2.73	1.11
Ash	9.25	11.79
Sulphur	1.01	0.72
Volatile matter	33.60	0.67
Fixed carbon	57.17	87.85

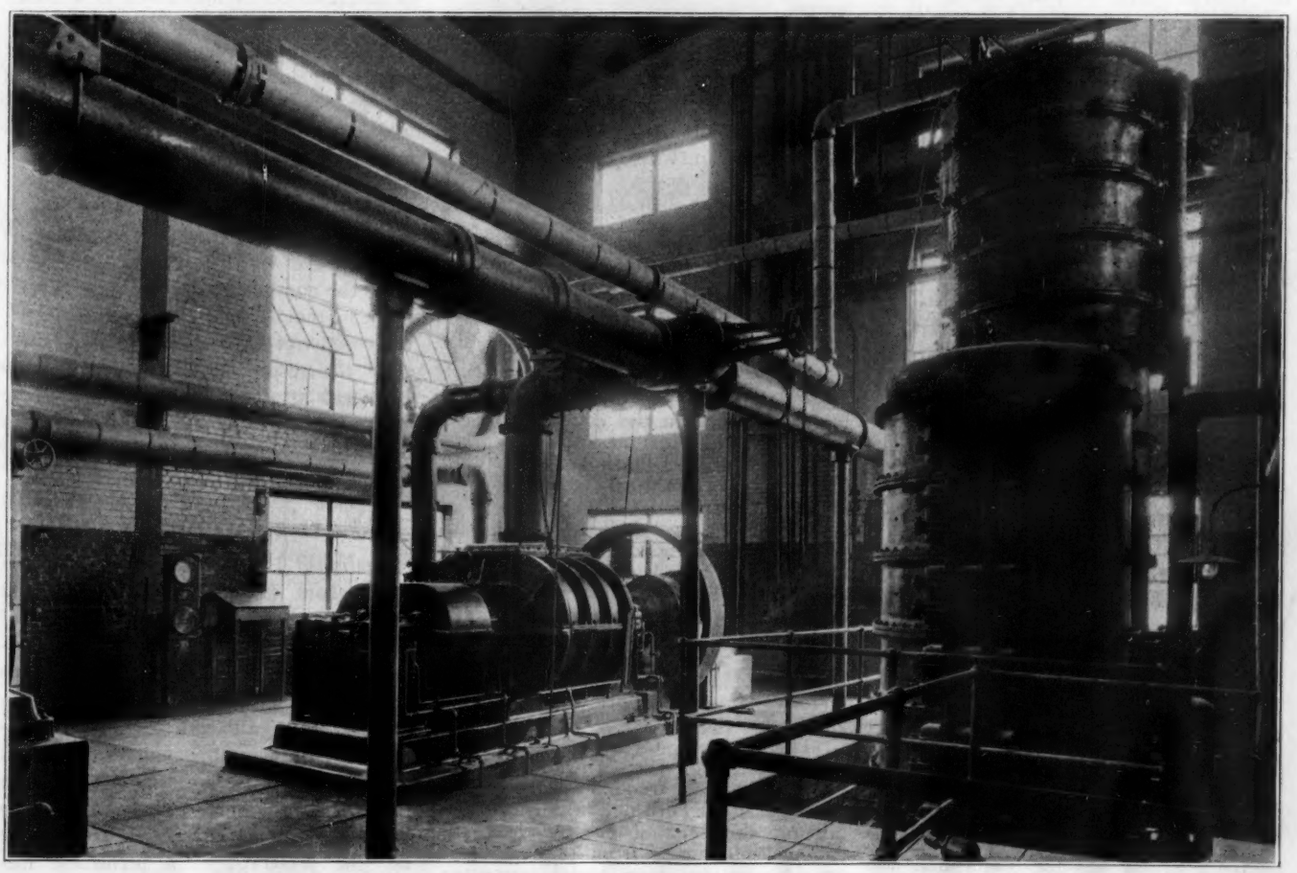


FIG. 9—IN THE CENTER IS SHOWN THE BOOSTER WHICH PUMPS THE SURPLUS GAS FROM THE BY-PRODUCT BUILDING TO THE SUPPLY LINES LEADING TO THE STEEL MILLS AND FINISHING PLANTS

Output of Rare Metals in 1922 Is Small

Production of rarer metals in the United States in 1922 was small and much of that used in alloying steel was imported, according to United States geological survey. A few small shipments of a few tons of cobalt ore were made from mines in this country, less than 50 tons of ore. Imports of metal and ore in 1922 were 131,559 pounds, valued at $328,471. No molybdenum ores were produced in 1922, as in 1921, in the United States, as far as the knowledge of the geological survey goes. Importations were 412,221 pounds, valued at $90,015.

The only nickel produced in the United States in 1922 was saved as a by-product in the electrolytic refining of copper. This totaled 208 short tons, valued at $133,191. Nickel, ores and alloys imported into the United States in 1922 were 14,919,362 pounds, valued at $3,945,168, while manufactures and finished forms were valued at $110,176.

No figures are available for 1922 on the production of titanium ores, though several deposits were worked and a considerable tonnage removed.

No tungsten ore was produced in the United States in 1922, though several workings were kept in readiness. Imports were 1865 short tons of ore, and 534 short tons of tungsten and ferrotungsten. No vanadium ores were mined in the United States in 1922 but 611,170 pounds valued at $86,776 were imported for use in alloying steel.

British Engineers Study Nonferrous Metals

At the annual meeting of the British Institute of Metals, which was held in London March 12 and 13, fourteen papers were read and discussed, dealing mainly with the scientific problems of the nonferrous metallurgist. Among these papers were the following: "X-Ray Studies on the Copper-Aluminum Alloys," by E. R. Jette, G. Phragmen, and A. F. Westgren; "The Effect of Casting Temperature on the Physical Properties of a Sand-Cast Zinc-Bronze," by Francis W. Rowe, metallurgical engineer, Stretford, Manchester; "The Cadmium-Lead-Zinc System," by Maurice Cook; and "Copper-Zinc Alloys which Expand on Solidification," by Kei Iokibe, Japanese Naval Office, London, S.W.1.

One of the most interesting items on the program was the presidential address of Prof. Thomas Turner of Birmingham university, in which the connection between pure scientific research and manufacturing problems was clearly traced. The report of the council showed that the institute now has 1531 members compared with 1436 a year ago and 1410 at the end of 1921. During the past year or so six local sections have been organized, in Birmingham, London, Sheffield, Swansea, the Northeast coast, and in Scotland. The work of the corrosion research committee is reported to have made good progress during the year. Several papers on the causes of rapid corrosion of condenser tubes have been published.

American Magnesite Is Handicapped

(*Concluded from Page* 1048)

cost of production and even if it is shipped by way of the Panama canal the profit is doubtful. Nearly all the magnesite produced in California in 1921 was calcined and ground before it was shipped to market but a small quantity was marketed in its crude state.

"No magnesite was produced in the mines of Washington in 1921. General slackness in the steel industry and increased imports of European material caused manufacturers of refractory materials to cease ordering from Washington producers, thus necessitating the closing of mines and of plants. Nevertheless, 4928 tons of calcined ore was shipped from Washington during the year. This ore was mined in 1920 and was included in the statistics of production for that year."

The bulletin gives the following description of an American interest in Austria, accounts of which were presented in IRON TRADE REVIEW, Jan. 5, 1911 and Oct. 22, 1914.

"Typical of the Austrian magnesite industry and of the immediate importance of its trade with the United States is the American-owned and operated works and deposits of the Austro-Amerikanische Magnesit Gesellschaft (American Refractories Co.) at Radenthein. The plant of this company is located in the county of Krain, within 30 miles of the important railway junction of Villach and just within the Italian frontier. It was formed in 1908, presumably in the interest of the American steel industries and with the object of breaking the German monopoly of the Austrian industry and effecting a reduction in the costs of magnesite products. It represents an investment of $2,000,000 to $3,000,000 in Europe and a larger investment in the United States in magnesite manufactories producing brick, tile, shapes and other products.

"The deposit forms the crest of an elevation of the Millstaetter Alps (1700 meters) a frequent characteristic of magnesite occurrence in Austria, permitting shipment of ore to plant and calcined magnesite from plant to railway by gravity over aerial tramways.

"The calcining plant is situated 9 kilometers distant and about 1000 meters below the deposit. Five months reserve of ore is maintained at the works. The calcining plant has eight shaft kilna and two rotary kilna. The total calcining capacity is 425 short tons per day, or 115,000 per year, allowing 25 per cent maximum for delays, repairs and similar interruptions.

"The brick plant has two hydraulic presses developing 1000 kilos pressure and two hydraulic presses of lower power. Calcined magnesite is crushed, mixed with 5 to 7 per cent water, pressed, dried and then baked in continuous furnaces, 120 meters long. The brick capacity is 60 to 80 tons per day or 25,000 tons per year. Products are shipped from the plant by a second aerial tramway 9 kilometers long to the company's railway station and siding at a slightly lower level.

"The large and easily quarried deposits of magnesite, the facility of transportation and the cheapness of labor (at least before the war) have all tended to give Austrian magnesite commercial supremacy in the world's markets. The conditions, moreover, help to explain the success which Austrian magnesite has achieved in the past and indicate the possibility of the competition it may be able to assert in the future."

Analyzes Flue Gases

An electrical method of gas analysis perfected recently at the bureau of standards, Washington, makes possible the immediate detection of the change in composition of flue gases in a boiler plant, the recording of these changes, and the manual or automatic control of regulating apparatus in accordance with the gas composition. The apparatus makes use of the fact that different gases have different rates of conducting heat. Consequently if an electrically heated wire is surrounded by the gas the rate at which the wire loses heat, and hence the temperature it will maintain, depends upon the composition of the gas. Variations in temperature change the electrical resistance of the wire, making possible the recording of the changes by electrical means. The device must be calibrated for each case in which it is used.

Watt's Home Is Sold

Heathfield Hall, James Watt's home in Birmingham, England, has been sold and the property will become part of a local real estate development. The house contains Watt's garret workshop which has never been touched since his death in August, 1819, although visited by hundreds of prominent engineers from all over the world. No decision has been reached as to what will be done with this room and its effects. It is hoped it may be preserved as a permanent memorial to the inventor of the steam engine.

Men of Industry

Personal News of a Business Character Pertaining to the Iron and Steel and Related Fields of Enterprise

RUSSELL W. SCHULTZE, well known in the iron and steel industry on the Pacific coast has joined the sales organization of the Youngstown Sheet & Tube Co., and at present will make his headquarters at the San Francisco office of the company in the Sharon building. Previous to his present connection, Schultze was with the Midvale Steel & Ordance Co. and the Midvale Co. from April 1919 to March 1924, spending his first year with this company in the San Francisco offices, the second year in Seattle and the third and fourth years in Los Angeles. From 1908 till the outbreak of the war, in 1917, Schultze was connected with the iron and steel department of Baker, Hamilton & Pacific Co. one of the largest iron and steel distributing companies on the Coast.

* * *

Richard W. Gardner has resigned as vice president of the Otis Elevator Co., New York.

* * *

Chairman E. H. Gary of the United States Steel Corp. returned from a two month's trip to South America, Monday, April 14, on the steamer VOLTAIRE.

* * *

H. M. Wallis, who has been president of the J. I. Case Plow Works, Racine, Wis., since 1892, has resigned on account of ill health. He is a son-in-law of the founder of the works.

* * *

K. T. Keller who has been appointed general manager of General Motors of Canada, Ltd., with headquarters at Oshawa, Ont has been an executive of that company for many years.

* * *

L. M. Killgore, formerly with the Pittsfield, Mass., plant of the General Electric Co., has been transferred to take charge of the engineering work in the new General Electric Transformer plant at Oakland, Cal.

* * *

John M. Sweeney, vice president and comptroller of General American Tank Car Co., New York, was elected a director at the annual meeting, succeeding Matthew C. Burns, resigned. Other retiring directors were re-elected.

* * *

H. A. Robinson, who for the past three years has covered the pig iron, coke and alloy trade in the New York territory, now is associated with the Philadelhia office of Crocker Bros.

* * *

Arthur C. Allshul, Buffalo manager of Joseph T. Ryerson & Son, Inc., was the recipient of a surprise dinner at the Hotel Statler, that city, April 5 in honor of the twenty-fifth anniversary of his connection with the company.

RUSSELL W. SCHULTZE

The dinner was tendered by about forty men of the Buffalo plant and among the other guests were E. J. McCarthy, president of Beals, McCarthy & Rogers, L. C. Davenport, vice president of Weed & Co., and H. W. Wendt Jr., vice president of the Buffalo Forge Co.

* * *

William R. Reid, general manager of the Torrington Co., Torrington, Conn., manufacturer of swaging machinery, has been elected president of the company to fill the vacancy caused by the death of John F. Alvord.

* * *

Henry G. Masey, recently placed in charge of the new Chicago office of Seneca Iron & Steel Co., Buffalo, manufacturer of steel sheets, formerly was New York district sales manager for that company.

* * *

Walter P. Maguire, managing partner of Watt & Co., Philadelphia, has just returned from a trip abroad. His time was divided between London and North Africa, where he made a complete inspection of the mines represented in the United States by his company.

* * *

F. B. Lounsberry has resigned as vice president and works manager and also as a director of the Hunter Crucible Steel Co., 6600 Grant avenue, Cleveland. Mr. Lounsberry has not made definite plans for future connections.

* * *

Henry K. Swinscoe, Worcester, Mass., superintendent of production of the division at Clinton, Mass., of the Wickwire-Spencer Steel Corp. has resigned his position effective May 1. Mr. Swinscoe has formulated no definite plans for the future.

* * *

W. Warner Thayer, for 15 years secretary of the state mining bureau of California, has joined the Calcoal & Iron Co. as secretary and treasurer. The company has its headquarters in the Monadnock building, 681 Market street, San Francisco.

* * *

H. C. Johnson, formerly with the Pittsburgh & Lake Erie railroad, and now traffic manager of the International Fuel & Iron Corp., will sever his connection with the latter concern, effective May 15, to take charge of traffic matters of the Pittsburgh Terminal Coal Co., Pittsburgh.

* * *

Charles D. Harrington, for many years president of the Harrington Cutlery Co., Southbridge, Mass., has transferred his holdings to Channing M. Wells, Albert B. Wells, and J. Cheney Wells, directors of the company. Mr. Harrington will retire from active business, although he will continue to be identified with the company.

* * *

H. H. Valiquet, recently connected with the Kirk & Blum Mfg. Co., Cincinnati, manufacturer of shavings and dust collecting systems, for 18 years was chief engineer of B. F. Sturtevant Co., Hyde Park, Mass., in the Chicago division. Mr. Valiquet will specialize on designing of dust collecting and pneumatic conveying systems, drying, ventilating, fume removing systems, etc., manufactured by the Kirk & Blum company.

News of Societies

Past and Coming Meetings of National and Local Trade and Technical Organizations

RUSSIA, industrial freedom as viewed by the ministry, farm conditions of tomorrow, industrial training and the physician in industry are among the topics to be discussed at the twenty-sixth annual convention of the National Metal Trade association which will be held at Hotel Astor, New York, April 23 and 24. The program of the meeting is as follows:

WEDNESDAY, APRIL 23

Morning

Reports of officers. Report of committees: Industrial education, Harold C. Smith, chairman; Membership, T. S. Hammond, chairman.

Discussion: "Our Association—A Quarter Century of Constructive Achievement," by the following past presidents: H. N. Covell, Lidgerwood Mfg. Co., Brooklyn, N. Y.; F. K. Copeland, Sullivan Machinery Co., Chicago; Henry D. Sharpe, Brown & Sharpe Mfg. Co., Providence, R. I.; Herbert H. Rice, Cadillac Motor Car Co., Detroit.

Afternoon

Discussion: "Industrial Training from a Practical Viewpoint," by John C. Spence, Norton Co., Worcester, Mass.; Thomas C. Shipley, York Mfg. Co., York, Pa.; George P. Aborn, Worthington Pump & Machine Co., East Cambridge, Mass.

Papers: "The Farmer of Tomorrow," by L. J. Taber, master of the National Grange; "Present Day Conditions in Russia," by Count Ilya Tolstoy; "Industrial Freedom," by Rev. Marion D. Shutter, Church of the Redeemer, Minneapolis.

Evening

Annual Dinner. Speaker, S. K. Ratcliffe, London. Subject, "The New Order in England—MacDonald and His Government."

THURSDAY, APRIL 24

Morning

Discussion: "The Physician in Industry," by Dr. John J. Moorhead, professor of surgery, New York Post Graduate Medical School and Hospital, New York, and Dr. W. I. Clark, Norton Co., Worcester, Mass. Discussion to be led by Dr. O. P. Geier, Cincinnati Milling Machine Co., Cincinnati.

Afternoon

Business meeting.

* * *

Program Is Announced

Industrial mobilization is one of the important topics to be considered at the spring meeting of the American Society of Mechanical Engineers at the Hotel Cleveland, Cleveland, May 26-29. A wide range of technical subjects has been included in the program which has just been announced by the society. Arrangements have been made for numerous inspection trips to manufacturing plants in the Cleveland district. The convention program is as follows:

MONDAY, MAY 26

Morning

Council meeting.
Local sections conference.

Afternoon

Business meeting.
Inspection trip to Nela Park.

TUESDAY, MAY 27

Morning

Machine shop session. "British Machine Tool Design," by W. E. Sykes; "Limiting Cases in Involute Spur Gearing," by A. B. Cox; "The Sine Bar as a Universal Planing Gage," by R. H. Rausch.

Windmill and fan design session.

Material handling session. "Fundamental Economics of Materials Handling," by M. L. Begeman; "Material Problems Encountered in Assembly of Automobiles," by M. R. Denison; "Lumber Handling in a Modern Body Plant," by B. Nagelvoort and Thomas D. Perry.

Power session. "Power Organization in the Steel Industry," by Bryant Bannister and F. M. Van Deventer; "Generation and Ultilization of Steam for Production of Power in Iron and Steel Industry," by John A. Hunter; "Use of Gas Engine in Steel Works," by A. E. Danks.

Afternoon

Inspection trip to Akron rubber plants.

Evening

Joint session with Akron local section of society.

WEDNESDAY, APRIL 28

Morning

Power session. "Pulverized Fuel," by W. H. Aldrich; "High Pressure Pumping," by L. A. Quayle; "Determination of Heat Losses Through Insulating Material by Means of Their Conductivity Co-efficients," by R. H. Heilman.

Management session. "Measurement of the Cost Accounting Function," by L. M. Lamb; "Measurement of the Quality of Product," by G. W. Radford; "Control of Idle Equipment," by W. L. Conrad.

Power test code session. Public hearing.

Aeronautic and ordnance session. "Aerial Bombing," by Maj. A. H. Hobley and H. B. Inglis; "The War's Impress on the Steel Industry," by Lt. Col. A. E. White; "Role of the Engineer in Industrial Mobilization Planning," by Capt. E. E. MacMorland.

Afternoon

Power session. "Emmet Mercury Vapor Process," by W. L. R. Emmet and L. A. Sheldon.

Design session.

Conferences.

Evening

Industrial Preparedness Dinner.

THURSDAY, MAY 29

Morning

Materials at high and low temperature session. "Industrial Application of Metals at Various Temperatures," by L. W. Spring; "Methods of Testing at Various Temperatures and Their Limitations," by V. T. Malcolm; "Available Data on the Properties of Irons and Steels at Various Temperatures," by H. J. French; "Available Data on the Properties of Nonferrous Metals," by A. E. White and H. W. Upthegrove. Recommendations of committee for future development.

Electric locomotive session.

Joint session with American Society of Refrigerating Engineers.

Machine shop session. "Analysis of a Machine Shop Problem on a Quantity and Final Economy Basis," by A. L. DeLeeuw; "Interchangeable Manufacture of United States Aarmy Rifle Bolt," by Maj. Earl McFarland.

Afternoon

Inspection trip to National Tube Co., Lorain, O.

* * *

Taylor Society to Meet

An outline program has been issued by the Taylor society, 29 West Thirty-ninth street, New York, which on April 24-26 will hold its regular meeting at Cambridge, Mass., in cooperation with the New England section of the society. Among the papers to be discussed are the following: "Who Can Hire Management?" by Henry S. Dennison, president Dennison Mfg. Co., Framingham, Mass.; "Operating a Scientific Management Plant in Agreement With Organized Labor," by Mrs. Jane C. Williams, director of personnel, Plimpton Press, Norwood, Mass.; "Master Planning Control of Sales and Production," by Joseph H. Barber, staff assistant to president, Walworth Mfg. Co., Boston; "Industrial Psychology—A Layman Asks Some Questions," by H. S. Person, managing director Taylor society, New York; and "Significant Savings in Textile Mill Operations," by Norman T. Thomas, superintendent of Jackson mills of Nashua Mfg. Co., Nashua, N. H.

Texas Laundry Machinery Co., San Antonio, Tex., has increased its capital from $40,000 to $50,000.

Convention Calendar

April 23-24—National Metal Trades association. Annual convention at the Hotel Astor, New York. Louis W. Fischer, Peoples Gas building, Chicago, is secretary.

April 24-26—Taylor society. Meeting at Cambridge, Mass. Headquarters of the society are 29 West Thirty-ninth street, New York.

April 24-26—American Electrochemical society. Spring meeting, Bellevue-Stratford hotel, Philadelphia, Dr. Collin G. Fink, Columbia university, New York, is secretary.

April 28-30—American Gear Manufacturers' association. Spring meeting, Lafayette hotel, Buffalo. T. W. Owen, 2443 Prospect avenue, Cleveland, is secretary.

April 30-May 2—Society of Industrial Engineers—Annual convention at Buffalo. George C. Dent, 608 South Dearborn street, Chicago, is secretary.

May 5-10—Sheet Steel Executives. Second annual convention under auspices of National Association of Sheet and Tin Plate Manufacturers, Hotel Greenbrier, White Sulphur Springs, W. Va. W. S. Horner, 1832 Oliver building, Pittsburgh, is chairman.

May 8-9—British Iron and Steel institute. Annual meeting at the Institution of Civil Engineers, London. G. C. Lloyd, 28 Victoria street, London, is secretary.

May 19-21—Southern Supply and Machinery Dealers' association, National Supply and Machinery Dealers' association, and American Supply and Machinery Manufacturers' association—Triple convention at Hotel Cleveland, Cleveland. Alvin M. Smith, Smith-Courtney Co., Richmond, Va.; T. James Fernley, 505 Arch street, Philadelphia; and F. D. Mitchell, 1819 Broadway, New York, are the secretaries respectively.

May 20-23—National Association of Purchasing Agents. Annual convention, Mechanics Hall, Boston. W. L. Chandler, 19 Park place, New York, is secretary.

May 22-23—American Society for Steel Treating. Spring sectional meeting, LeClaire hotel, Moline, Ill. W. H. Eisenman, 4600 Prospect avenue, Cleveland, is secretary.

May 22-23—National Pipe and Supply association. Annual meeting, Hotel Cleveland. George L. McIlvane, 909 Oliver building, Pittsburgh, is secretary.

May 26-29—American Society of Mechanical Engineers—Spring meeting Hotel Cleveland, Cleveland. Calvin W. Rice, 29 West Thirty-ninth street, New York, is secretary.

Here and There in Industry

Live Information Which Records the Expansion of Various Lines of Productive Enterprise

THREE units for the manufacture of products under the supervision of tht Colby Management Corp., Los Angeles, will be constructed at Monrovia, Cal., by the Union Iron Works. The first unit will be 100 x 300 feet, saw-tooth type, steel frame construction and will house the foundry. The old foundry facilities of the Colby corporation will be moved to the new plant. The second unit will be the machine shop and the third the assembling plant. The Colby corporation is a holding and management company for various industrial companies among which are the Vacuum Street Cleaner Mfg. Co., Southern California Truck Owners' association, Kimball Motors Corp., Industrial Finance & Mortgage Co., etc. The present location of the plant is at Huntington park.

* * *

CA. SLEICHER, president of the Interstate Foundry Co., Cleveland, has leased a gray iron foundry of that company from the present receiver and will operate it to fill contracts for castings made by customers with the Interstate company.

* * *

A NEW type of wrench will be manufactured by the Bull Dog Wrench Co., Benton Harbor, Mich., recently incorporated for $20,000. Nathan D. Simpson is president, L. Klett is vice president, Otis Klett, secretary and treasurer and William Gillovly production manager. Production is to begin early in April.

* * *

WILLIAM H. Eager was re-elected president of the Whitman & Barnes Mfg. Co., Akron, O., manufacturer of drop forgings, twist drills, etc., at the recent annual meeting. A. B. Hall and A. S. Carter were re-elected vice presidents, E. A. Fisher secretary and treasurer and Karl Kendig, assistant secretary.

* * *

CONTRACTS closed recently by F. J. Ryan & Co., Philadelphia, include the following: Core oven equipment, Philadelphia Stove Works, Philadelphia; additional pipe annealing furnaces, National Cast Iron Pipe Co., and United States Cast Iron Pipe & Foundry Co., Birmingham, Ala.; burner systems, Tacony Steel Co., Tacony, Pa., Harry Dobrin, Birmingham, and Canadian Steel Foundries, Montreal Que. electric furnaces, Pratt & Whitney and Whitney Mfg. Co., Hartford Conn.; annealing ovens, American Bosch Magneto Corp., Springfield, Mass., and rivet heating forge unit, Alloy Steel Corp., Canton, O.

* * *

THE DONORA, a new towboat of the American Steel & Wire Co., was launched April 5 at the Howard Shipyard & Dock Co., yard at Jeffersonville, Ind. The boat is 165 x 32 feet, and will draw six feet of water. It will be brought to Pittsburgh in August and will be used for towing at the various plants of the wire company in the Pittsburgh district.

* * *

STEEL pallets will be the principal product of the Philadelphia Fabricating Co., 4543 Wayne avenue, Philadelphia, incorporated some months ago to do sheet and plate fabrication, light structural work and manufacture checkered floor plates, stair treads risers, etc. Plans have not been announced as yet for the construction of plants or purchase of machinery and equipment.

* * *

WALTER W. SHAW, banker of Tulsa, Okla., was elected president of the Fairfax Iron & Steel Co., recently incorporated to build a $1,000,000 plant in the Fairfax industrial district, Kansas City, Kans. S. W. Parish was elected vice president, R. V. Converse second vice president, W. C. Rickel, treasurer and J. E. Gill, secretary. Construction of the plant is to begin before June, on a site near the foot of Lafayette avenue, Kansas City, Kans.

* * *

WORK has been started by the Weber Showcase & Fixture Co., on the construction of a plant at Fifty-sixth street and South Park avenue, Los Angeles. Hamm & Grant, Inc., Los Angeles, industrial engineers, have been retained to do the engineering work. A 1-story plant, with seven acres of floor space will be constructed of brick, cement, wood and steel. A 30 x 30-foot reinforced concrete power plant housing two 100-horsepower boilers also will be constructed.

* * *

ELECTRICALLY operated molding machines for working wood stock into molding, fancy patterns, etc., will be manufactured by the P. B. Yates Machine Co., Beloit, Wis. It is converting a large area in the foundry built several years ago into a machine shop to produce one complete machine a day. The Studebaker Corp., South Bend, Ind., has placed a large order for this type of equipment. About $100,000 worth of new shop equipment is being purchased by the Yates company for the new department.

* * *

SHIPMENTS of pig iron of the Replogle Steel Co., Wharton, N. J., which now owns 90 per cent of the Empire Steel & Iron Co., were 176,353 tons in 1923. Unfilled orders on Jan. 1, 1924, were 29,292 tons while stocks of iron amounted to 35,237 tons. A report has been issued by J. L. Replogle, chairman of the board and Leonard Peckitt, president. According to the report, directors are considering the erection of a by-product coke plant near Wharton, and eventually the company hopes to have finishing mills.

* * *

SMELTING of copper, brass and bronze is to begin next week by the Linndale Reduction Co., Cleveland, which recently was incorporated. The plant of the Parish Pool Co. in the Linndale section of Cleveland was purchased. The new company represents the combining of the Koblitz-Kohn Co., secondary metal dealer, and the Nichols Copper Co., New York, refiner. Julian B. Beaty, vice president of the Nichols company is president of the Linndale Reduction Co., J. B. Kohn, president of Koblitz-Kohn Co. is vice president, and E. H. Simonson of the Nichols company is secretary and treasurer.

Employment Decreases

Detroit, April 15.—Employment in Detroit in industrial plants for the week ended April 8 decreased 652 to a total of 237,611. Seventy-nine plants reporting to the employers' association are represented in these figures. In the week ended April 1 the decrease was 2323. Since April 8 several large automobile plants have curtailed operations. The Jewett plant has been closed.

Gear Makers Announce Convention Program

Because of the success of a meeting held in Buffalo two years ago, the American Gear Manufacturers association will hold its eighth annual spring meeting there April 28-30. Headquarters will be at the Lafayette hotel. According to the program which has just been announced, the meeting will consist of five general sessions with an informal banquet on Tuesday night. Plant visitation has been arranged for Tuesday afternoon. The detailed program is as follows:

MONDAY, APRIL 28

Morning

Committee meetings.

Afternoon

Address: "The Year in Prospect," by George L. Markland Jr., Philadelphia Gear Works, Philadelphia, and president of the association.

Committee reports.

Paper: "Gear Practice in England," by W. E. Sykes, Farrell Foundry & Machine Co., Buffalo.

Evening

Paper: "Value of Cost Accounting to an Executive," by Russell C. Ball, Philadelphia Gear Works, Philadelphia.

TUESDAY, APRIL 29

Morning

Election of executive committee.

Address: "The Gear Manufacturer Needed," by L. G. Hewins, Van Dorn & Dutton Co., Cleveland.

Afternoon

Plant visitation.

Executive committee meeting.

Evening

Informal banquet. Addresses: "The 75-Cent Dollar in Business," by S. F. Fannon, Sherwin Service, Inc.; and subject not announced by James B. Horn.

WEDNESDAY, APRIL 30

Morning

Papers: "Application of Spiral Bevel Gears," by F. E. McMullen, Gleason Works, Rochester, N. Y.; "Advertising as an Investment for the Gear Manufacturer," by J. C. McQuiston, advertising manager, Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.; subject not announced, E. S. Sawtelle, Tool Gear Steel & Pinion Co., Cincinnati.

Industrial group meeting. A. F. Cook, chairman.

Afternoon

Papers: "Practical Metallography," by Stanley P. Rockwell, metallurgist, Hartford, Conn.; "Gears and Pinions of Equal Strength," by M. A. Durland, assistant professor of machine design, Kansas State agricultural college.

Automotive group meeting. E. J. Frost, chairman.

Topping Says Outlook Is for Better Buying

John A. Topping, chairman of the Republic Iron & Steel Co. at the stockholders' meeting, in reply to inquiries as to the outlook for iron and steel, said:

"Business is less active, but this fact is not significant, when considered in connection with January and February sales activity, as buying movements are usually followed by quiet periods.

"Sensational developments at Washington and the business public's disappointment over tax relief measure has also suggested caution. In general, I believe buying is at the low point, because the evidence all points to consumption stocks are not excessive, while the buying power of the public has not been affected, and increased demand should not be far off.

"As to Republic's improvements, they will cost approximately, $4,500,000 and upon completion, will increase both the output of steel and steel pipe capacity, and furthermore, reduce the cost of production. No additional financing will be required for this work.

"With respect to current earnings, they are on the whole, satisfactory, and while no definite statement can be made on this subject in advance, it may be said that indications suggest favorable first quarter profits."

Manufacturers To Study Power Facilities

The question of power facilities, requirements and sources of supply in New England, will be the subject of discussion at a joint meeting of the Associated Industries of Massachusetts with the Affiliated Technical Societies of Boston to be held April 29 at Lorimer hall, Boston. Clifford S. Anderson of the Norton Co., Worcester, Mass., and president of the Associated Industries of Massachusetts will preside.

Furnace Goes Out

Witherbee Sherman & Co. have blown out their large blast furnace at Port Henry, N. Y., for repairs. This places both of the furnaces of this company on the idle list and it is unlikely that repairs to either one of of them can be completed in time to admit of resuming operations before a couple of months have elapsed.

The Reading Iron Co. blew in its Keystone furnace at Reading, Pa., April 4.

Obituaries

THOMAS M. FILLINGHAM, vice president and chief engineer of the National Valve & Mfg. Co., Pittsburgh, died while on a business trip to Farrell, Pa. He collapsed in the plant of the American Sheet & Tin Plate Co. at Farrell, and died a few minutes later in the emergency hospital. Mr Fillingham was aged 44 and apparently was in good health when he left Pittsburgh early in the day to inspect work being done in the American company's plant.

* * *

P. W. Sommer, president and general manager of the Keystone Steel & Wire Co., Peoria, Ill., died April 7 at Chicago.

* * *

W. R. Coffin, cashier of the Trumbull Steel Co., Warren, O., died in a hospital in Youngstown, April 10 as result of injuries received April 6.

* * *

William G. Gronau, for the last 10 years an officer of the Dominion Bridge Co., Montreal, Que., died at his home in that city April 11. Mr. Gronau at one time was chief engineer for the New York Shipbuilding Co. He was the engineer who designed the world's fair ferris wheel at Chicago in 1893.

* * *

James Dunlop, Montreal, died April 3 at the age of 69 years. He had been connected with the iron and steel industry for the last 45 years and was sales manager in Quebec province for the Canadian Tube & Steel Products Co. at the time of his death. He was a founder and a director of that company.

* * *

George Dallas Willis, at one time a leading tack manufacturer, died April 6 at his home in South Braintree Mass. Mr. Willis began the manufacture of tacks for shoes when a young man and later opened a business with Capt. James T. Stevens under the firm name of Stevens & Willis. In 1882 he was elected secretary of the Central Tack & Nail Corp. of the United States.

* * *

Harry C. May, Indianapolis, former president of the Midwest Engine Corp., Indianapolis and a former prominent railroad man of the Central West, died recently. He was born in Indianapolis. Feb. 26, 1878 and was graduated from Purdue university in 1902. When the old Midwest Engine Co. was taken over by the Midwest Engine Corp. a year ago, Mr. May returned to Indianapolis as its head.

* * *

Col. Robert Kirkup, 92 years old, president of Robert Kirkup & Co., Cincinnati, brass manufacturer died at his home in that city, April 11. Colonel Kirkup was one of the oldest brass manufacturers in the Middle West. He was colonel of the fifth Ohio volunteer infantry during the Civil war. Colonel Kirkup was born in Scotland and came to this country when he was 28 years old. He opened his brass foundry in 1868.

Machinery Dullness Continues

Volume of Sales and Inquiries Is Lighter—Heavy Tools Move Better in Pittsburgh District—Sentiment Better Among New England Manufacturers—Crane Buyers Still Are Marking Time—Used Tool Demand Dwindles Further

QUIETNESS continues to characterize the machine tool industry. Improvement which was noted in the New York district has disappeared and the market generally is listless. Sentiment is better among New England machinery manufacturers although buying shows no increase. Heavy tools are meeting a better demand in the Pittsburgh territory, the Carnegie Steel Co. ordering complete equipment for its coke handling plant at Mingo Junction, O. The American Locomotive Co. also was a buyer of heavy equipment, its purchases last week totaling over $500,000. This included eight frame planers, slab millers, frame slotters, heavy duty radial drills, etc.

Export business is in good volume, economic and political conditions in Europe not diminishing trading with South America and the Far East. One company closed on a 24-inch lathe and a 26-inch planer for South America and a 16-inch lathe for Spain. Another interest sold a 30-inch planer to the Honolulu Iron Works, Hawaii.

Railroad buying has been disappointing to the machine tool manufacturers. Although large lists are out now for several roads, no inclination is shown to follow up with orders. New York Central and Boston & Maine have added to their lists. The Atchison, Topeka & Santa Fe has begun ordering a few of the many tools it seeks.

Industrial buying continues to comprise the major part of present business. The General Electric Co. and the Westinghouse Electric & Mfg. Co., still require a good number of tools to complete present expansion programs. Despite the recent recession in production schedules of the automobile manufacturers, Nash Motors Co. and the Studebaker Corp. have purchased additional equipment. No large increase in automotive demand is expected until spring weather opens up and allows the winter's backlog of finished products to be liquidated.

Price concessions have begun to appear more openly in several districts, competition becoming keener as the volume of business dwindles. Few revisions have been made in price lists although sizable reductions are being made to obtain attractive orders.

Used equipment demand has decreased further with little more than small tools being sold. Hesitation of buyers has been reflected in the prices being offered by some dealers to induce purchases.

Demand for cranes of all types has been light with few inquiries being brought into the market. A large number of crane orders are pending, and the present inactivity in sales is not expected to last long.

One feature of the crane market this week was the award of 11 5-ton cranes for new extensions at the Ford Motor Co., Detroit, to the Morgan Engineering Co., Alliance, O.

Action Still Deferred on Large Lists Pending

NEW YORK, April 15.—The improvement noted in the local machine tool market last week has again disapeared, the situation as a whole being listless. This lack of general activity is offset in a measure by buying of the American Locomotive Co., whose purchases of heavy equipment for Schenectady, N. Y. has amounted to well over $500,000. Eight frame planers, some slab millers and two frame slotters were placed with one manufacturer; six heavy duty radial drills and three automatic punching and spacing machines with another; and some additional slab millers with still another. Inquiries for lighter equipment are to be issued later. The Honolulu Iron Works, Woolworth building, this city, has closed on a 30-inch planer, while the Algoma Central railroad, Canada, has purchased a 2500-pound steam hammer.

No action has yet been taken by the Southern railroad on its proposed list for Birmingham, Ala., nor by the New York Central within the past couple of weeks on its fairly sizable list. The Boston & Maine has come into the market for two car wheel borers, two car wheel presses and two car axle lathes. The General Electric Co., always more or less active in the market, recently issued an inquiry for six radial drills and two planers for its plant at Schenectady, N. Y.

While few revisions have been made in price lists, concessions are quite common on anything like desirable business. Sellers look for little strengthening of the market in the near future. An easier situation also prevails in overhead cranes, for which demand the past week has been light.

Quietness More Pronounced

CLEVELAND, April 15.—Quietness in the machine tool market was more pronounced last week, dealers and manufacturers reporting the slowest business this year. Although the market generally was inactive one dealer found business far from dull, closing orders on about 10 large tools and receiving inquiries for as many more. This interest sold three milling machines, three lathes and three drill presses to Northern Ohio companies. Sale of several smaller tools was reported also by this company.

Railroad buying to any extent is lacking, with some uncertainty existing whether or not one road will enter this territory for the bulk of a large list outstanding. The New York Central has added to its ever growing inquiry asking quotations on two or three more machines. Most of the demand is coming from industrial companies. Inqiries have fallen off, with one dealer alone reporting an undiminished number.

Crane orders are fewer with inquiries more scattered. A large number of inquiries are out now that should be closed soon. Approximately 25 cranes are on the verge of being purchased.

Curtailed automotive production and backward spring building programs are helping to delay purchases of machine tools in this district. There is a considerable volume of inquiry which is scheduled to be closed in from 30 to 60 days, or as soon as there are indications of a return to normal confidence among buyers.

Used tool demand was light last week, few dealers reporting sales of large machines. There are plenty of shoppers in the market for machinery but few seem to be in any hurry to close up sales. Small used tools continue to be sold in

good volume, but there are indications of this trade becoming slower. Few sales are being made to local manufacturers, most of the current demand coming from northern Ohio companies or industries in Pittsburgh or Detroit districts.

New England Sentiment Better

BOSTON, April 15.—While machine tool sales have not improved noticeably during the past week a better sentiment is apparent. Dealers continue to find scattered orders which show a better total each week than a year ago. Small tool demand is active. Building programs are heavy and all contributary lines of equipment are in fair demand. Used tool dealers report a poor week. Sales of new tools include a turret lathe to a western Massachusetts manufacturer, three lathes to a textile machine manufacturer, a planer and a shaper to a Boston machine shop, and a heavy stamping machine to a Worcester manufacturer.

Volume of Sales Declining

CINCINNATI, April 15.—Little change was noted in the condition of the local machine tool market last week. Sales showed a slight increase over the preceding week but the volume of business has been declining since the middle of last month. Practically all sales are confined to a small number of tools, both standard and special type machines being sold. In some sections, it is reported that the present level of prices is hindering sales and that buyers are holding off for lower figures.

It is expected that the railroad will resume buying next month. Several western roads have announced already that they would be in the market shortly for machine tools of various types. Norwood, O., will purchase an electrical pumping unit for its waterworks plant. The city council has appropriated $40,000 for the purchase of the unit. The Lunkenheimer Co., manufacturer of valves, will be in the market in the near future for a list of tools to outfit its machine shop under construction at Carthage, O.

The American Locomotive Co., is closing on its list and it is believed that a Cincinnati company will get the order for four special built planers. Business in used machinery continues light.

One manufacturer of small electric tools in this district has reduced its prices from 5 to 17 per cent.

Inquiries Continue Falling Off

CHICAGO, April 15.—The slump in new machine tools continues unchecked. Prospective buyers have become wary in view of the unsettled condition of business. Despite the recession in the automobile industry recently, the Nash Motors Co. and the Studebaker Corp. have been buyers of several machines. The Nash purchase is understood to include several turret lathes. The A. O. Smith Corp., Milwaukee, has placed several miscellaneous tools, but will not act on its general list until next month, according to the information of Chicago machinery dealers. A report has been afloat that the Atchison, Topeka & Santa Fe railroad has begun ordering some of the equipment for which it has been inquiring. This road has placed a quartering machine with a local house but general awards cannot be confirmed. The Cedar Rapids & Iowa railroad has purchased a 300-ton wheel press. The New York Central railroad is inquiring for a punch, a shear and a 25-inch upright drill press. The Inland Steel Co. list remains open. Buying for the new tube mill at Gary, Ind., will be approached shortly, with the buildings well under way.

Heavy Tools Move Better

PITTSBURGH, April 15.—The heavier lines of equipment took precedence over machine tools in the equipment market last week, one of the largest orders being placed by the Carnegie Steel Co. for its complete coke handling plant at Mingo Junction, O., involving an expenditure of about $250,000. This included a tower, screening plant, belt conveyors, etc., the order going to the Mead Morrison Mfg. Co. This interest bought a large woodworking machine, paying about $6000, for Munhall, Pa., which went to the Somers, Fitler & Todd Co., negotiations on which were started about 18 months ago. The Standard Steel Car Co., Butler Pa., bought four 4-ton special hoists from the Shaw Electric Crane Works, Muskegon, Mich., while one or two other crane orders are noted, including some locomotive cranes. Sales of machine tools are few although sellers are working on a large number of inquiries, including several lists such as that of the Carnegie Steel Co. for Homestead, Pa. Typical sales reported by one house include two 24-inch lathes, one punch and shear, one bending machine, and one thread milling machine.

Crane Awards and Inquiries of the Week

Orders Placed

Five 25-ton locomotive cranes for the American Rolling Mill Co., Ashland, Ky., to the Ohio Locomotive Crane Co.

Four 4-ton special hoists for the Standard Steel Car Co., Butler, Pa., to the Shaw Electric Crane Works.

Two 75-ton trolleys, Central of Georgia railroad, to an eastern builder.

Single Machine Orders

35-ton locomotive crane for Fort Pitt Bridge Works, Pittsburgh, to Industrial Works, through Ridenour, Seaver & Kendig, Cleveland.

30-ton locomotive crane for the Louisville & Nashville railroad, to the Browning Co.

1000-foot monorail system, equipped with two 2-ton and one 1-ton handpower cranes, for the Green Fuel Economy Co., Beacon, N. Y., to the tramrail division of the Cleveland Crane & Engineering Co.; this contract was placed about a month ago, but is just now being announced.

90-ton electric crane, 45-foot, 8-inch span, for the Asano Bussan Co., 165 Broadway, New York, for export, to unnamed builder; the crane is to be equipped with a 10-ton auxiliary.

30-ton locomotive crane for the Hunter Construction Co., Youngstown, O., to Industrial Works, through Ridenour, Seaver & Kendig.

20-ton crane, for Pittsburgh railroad contractor, to McMyler-Interstate Co.

Three-quarter yard crawler shovel, for the Charleston Sand & Stone Co., Elkton, W. Va., to the Pawling & Harnischfeger Co.

Three-quarter yard drag line machine for the United Dredging Co., Woolworth building, New York, to the Pawling & Harnischfeger Co.

10-ton electric overhead crane, for the Vulcan Iron Works, Wilkes Barre, Pa., to the Milwaukee Electric Crane & Mfg. Co.

Locomotive crane, M. A. Hanna Co., Cleveland, for Hanna Furnace Co., Detroit, to Industrial Works.

20-ton locomotive crane for Bloedel-Donovan Lumber Co. Skyhomish, Wash., to the Ohio Locomotive Crane Co.

20-ton locomotive crane for Great Lakes Foundry Co., Port Huron, Mich., to the Ohio Locomotive Crane Co.

20-ton locomotive crane for Jackson Iron & Steel Co., Jackson, O., to the Ohio Locomotive Crane Co.

30-ton locomotive crane for Phoenix Utility Co., Omaha, Nebr., to the Ohio Locomotive Crane Co.

20-ton locomotive crane for the Ohio Tront Coal Coke & Amalgam Co., Toledo. O., to the Ohio Locomotive Crane Co.

20-ton locomotive crane for Yorke H. Smith, Cleveland, to the Ohio Locomotive Crane Co.

20-ton locomotive crane for the Ohio Coal & Supply Co., Cleveland, to the Ohio Locomotive Crane Co.

15-ton locomotive crane for the Washington Pulp & Paper Co., Port Angeles, Wash., to the Ohio Locomotive Crane Co.

25-ton locomotive crane for the National Tube Co., Lorain, O., to the McMyler Interstate Co.

20-ton crane for the Ferguson-Edmundson Co., Sandusky, O., contractor, to the McMyler Interstate Co.

3-ton and 5-ton crane for the H. K. Porter Co., Pittsburgh, to an unnamed builder.

Orders Pending

50-ton electric crane for the plant at Erie, Pa., of the General Electric Co., Schenectady, N. Y.; withdrawn.

Conveying equipment for ore handling in concentrating plant of Anzan Steel Works of the South Manchurian railroad; inquiry issued through New York export houses.

Four electric cranes, inquired for through the Foundation Co., New York, for shops of the Southern railroad, Knoxville, Tenn.; two cranes to be of 10 tons capacity, one of five tons and the fourth a grab bucket crane, the capacity to be decided later.

Recent Industrial Business Changes

SUPERIOR BASIC BRICK CO., Pittsburgh, manufacturer of open hearth and magnesite brick for electric furnaces, has appointed Baltzar de Mare as eastern representative. Mr. de Mare is a consulting engineer and metallurgist specializing in the manufacture of steel by open hearth and electric furnace processes. Mr. de Mare was noted previously as being connected with the Standard Basic Brick Co.

* * *

Foundry Chaplet & Supply Co., Chicago, has been dissolved.

* * *

Interstate Brass Co., Chicago, has changed its name to Interstate Brass & Copper Co.

* * *

Trapper-Duberstein Brass Co., New York, has changed its name to Great Eastern Brass Works.

* * *

Carthage Machine Co., Inc., Carthage, N. Y., has purchased the plant of J. C. Wilson Mfg. Co., Belleville, Ont. Plans have not been formulated as yet for expansion of the recently acquired Canadian properties.

* * *

Turner Heat Treating Co. announces its removal to its new building at 485 National avenue, Milwaukee.

* * *

The Midvale Co., Nicetown, Philadelphia, has added Washington to the list of its district offices, its location being at Fifteenth and H. streets, N. W.

* * *

Geo. H. Smith Steel Casting Co., Clinton steet, Milwaukee, has changed the address of its Chicago office to 549 West Washington boulevard.

* * *

Interstate Foundry Specialties Corp., 248 Fulton street, New York, no longer is representing the National Engineering Co., Chicago, in the former city. G. C. Richards, Philadelphia, now is representing the National company in that district. The National company manufactures sand mixers and foundry equipment.

* * *

Reeves Machinery Co., has moved from 17 East Rich street, to 75 East Spring street, Columbus. O. J. F. Reeves is head of the company.

* * *

The S. Deschauer Co., 1347 Blue Island avenue, Chicago, has purchased the plant of the Aztec Iron Works, Cicero avenue and Fifteenth street.

* * *

The Hudson Motor Car Co. has purchased the plant and site of the Jefferson Forge Products Co., on East Jefferson avenue, Detroit. Additional manufacturing and shipping facilities will be provided in the near future.

* * *

Brooklyn Export & Steel Mfg. Co., general exporter and importer has moved its offices from 120 Liberty street, New York, to First National Bank building, Jersey City, N. J.

* * *

Quigley Furnace Specialties Co., 26 Cortland street, New York, manufacturer of materials for furnace construction and maintenance will move its Chicago office to 9 South Clinton street, as of May 1.

* * *

Seneca Iron & Steel Co., Buffalo, maker of steel sheets, will open an office in Chicago on May 1 at 462 Wrigley building north, in charge of Henry G. Massey, formerly New York district sales manager.

* * *

The Sterling Grinding Wheel Co. became the Artificial Abrasive division of the Cleveland Stone Co., Cleveland, effective as of April 1. The executive offices of the Sterling company have been moved from Tiffin, O., to 1836 Euclid avenue, Cleveland, where the offices of the Cleveland Stone Co. are located.

* * *

The Boston office of the Salem Iron Foundry Co., Inc., Salem, Mass., has been discontinued. Edward P. Brock formerly represented the Salem company with offices at 231 Congress street. He recently resigned this position and the Boston office has been closed.

* * *

American Frog & Switch Co, Hamilton, O., manufacturer of railway track equipment has discontinued temporarily its representation in New York. The Pittsburgh office, 1207 Diamond Bank building, will handle that territory.

* * *

Wickman Screw Works on April 1 was succeeded by the Union Screw & Mfg. Co., Pittsburgh, with offices and works at 420 Neptune street. The ownership and active management will continue unchanged, with O. C. Zimmerman as president.

* * *

The Rogers Foundry & Mfg. Co., Joplin, Mo., has acquired the plant of the Joplin Steel & Malleable Co., Railroad and Third streets, that city, where it will carry on its business. Plans are under way for extensions which are expected to increase largely the present capacity. John A. Rogers is president.

* * *

Leland, Gifford & Co., Worcester, Mass., has taken over the Putnam Foundry & Machinery Co., Putnam, Conn., manufacturer of boilers, and will operate as the Putnam company. Contracts have been awarded for enlarging the Putnam plant.

Construction and Enterprise

Concise and Timely Business Building Opportunities from the Field of Industry

LOS ANGELES—West Coast Pipe & Steel Co. has been incorporated recently in this city.

OAKLAND, CAL.—The Niedringhaus Metal Ware Corp., 5739 Natural Bridge street, St. Louis, plans constructing plant on 5-acre site here.

OAKLAND, CAL.—The Puget Sound Auto Co., plans constructing plant for building automobiles. W. A. King, Bank of Savings building, is interested.

SAN FRANCISCO—The Montague Range & Furnace Co. has leased a plant for a site where it plans 2-story building. S. Heiman, 57 Post street, is architect.

PUTNAM, CONN.—Putnam Foundry & Machinery Co. has been taken over by Leland, Gifford & Co., Worcester, Mass., manufacturer of drills. The Worcester company will operate as the Putnam company, continuing the manufacture of boilers. Contracts have been let for a foundry addition to handle machine tools castings.

Where additional information is presented, reference is made to date of issue in which previous item appeared.

WATERBURY, CONN.—Waterbury Buckle Co., 872 Main street, manufacturer of metal products, contemplates constructing 5-story, brick and steel plant addition.

DUNEDIN, FLA.—The Skinner Machinery Co., manufacturer of packing house equipment, will make oil burning steam and hot water boilers.

COLUMBUS, GA.—Application for incorporation has been filed by the Columbus Electric & Power Co. to build a $5,000,000 power plant on the Chattahoochee river, 16 miles north of here.

MACON, GA.—Flint River Power Co., newly organized subsidiary of the Central Georgia Power Co. will double the electric development in central Georgia.

CHICAGO—Delta Star Electric Co., H. A. Young, 2433 Fulton street, president, is taking bids on a 1-story pressed brick plant.

CHICAGO—The S. Deschauer Co., 1347 Blue Island avenue, has purchased the plant of the Aztec Iron Works Co., Cicero avenue and Fifteenth street, and will spend $25,000 on improvements.

CHICAGO—James B. Clow & Sons, is hav-

Warehouse Steel Prices

Quotations at Cents Per Pound at Leading Market Centers

STEEL BARS

Boston	3.20c to 3.515c
Buffalo	3.55c
Chicago	3.20c
Cincinnati	3.40c to 3.50c
Cleveland	3.36c
Detroit	3.35c
Los Angeles	3.75c
New York	3.49c
Philadelphia	3.35c to 3.47c
Pittsburgh	3.15c
San Francisco	3.75c
Seattle	3.50c
St. Louis	3.35c
St. Paul	3.45c

IRON BARS

Boston	3.54c
Buffalo	3.50c
Chicago	3.20c
Cincinnati	3.40c to 3.50c
Detroit	3.35c
New York	3.49c
Philadelphia	3.35c to 3.47c
St. Louis	3.35c

REINFORCING BARS

Boston	2.90c
Chicago	2.65c to 2.75c
Cincinnati	3.40c to 3.50c
Cleveland	3.36c
Los Angeles,	3.50c to 3.60c
Philadelphia	3.00c to 3.47c
Pittsburgh	2.40c to 2.50c
San Francisco, C. L.	3.65c
San Francisco L. C. L.	4.00c
Seattle	3.50c

SHAPES, STRUCTURAL

Boston	3.25c to 3.615c
Buffalo	3.65c
Chicago	3.30c
Cincinnati	3.50c to 3.60c
Cleveland	3.46c
Detroit	3.45c
Los Angeles	3.85c
New York	3.59c
Philadelphia	3.35c to 3.57c
Pittsburgh	3.25c
San Francisco	3.60c
Seattle (large shapes)	3.60c
St. Louis	3.45c
St. Paul	3.55c

PLATES

Boston	3.64c.
Buffalo	3.65c
Chicago	3.30c
Cincinnati	3.50c to 3.60c
Cleveland	3.46c
Detroit	3.45c
Detroit, 3/16-inch	3.45c
Los Angeles	4.00c
New York	3.59c
Philadelphia	3.35c to 3.57c
Philadelphia, 3/16-inch	3.60c to 3.82c
Pittsburgh	3.25c
San Francisco	3.75c
Seattle	3.50c
St. Louis	3.45c
St. Paul	3.55c

NO. 10 BLUE ANNEALED SHEETS

Boston, 3/16-inch	4.34c
Buffalo	4.30c
Chicago	4.00c
Cincinnati	4.10c
Cleveland	3.75c to 4.06c
Detroit	4.15c
Los Angeles	5.00c
New York	4.34c
Philadelphia	3.95c to 4.10c
San Francisco	5.00c
Seattle	5.00c
St. Louis	4.10c
St. Paul	4.25c

NO. 28 BLACK SHEETS

Boston	4.85c
Buffalo	5.00c
Chicago	4.70c
Cincinnati	4.80c
Cleveland	4.65c to 4.75c
Detroit	4.85c
Los Angeles	6.20c
Philadelphia	5.00c to 5.15c
New York	4.85c
San Francisco	5.80c
Seattle	6.00c
St. Louis	5.00c
St. Paul	4.95c

NO 28 GALVANIZED SHEETS

Boston	5.85c
Buffalo	6.10c
Chicago	5.60c
Cincinnati	5.95c
Cleveland	5.75c to 5.80c
Detroit	6.00c
Los Angeles	7.00c
New York	5.85c
Philadelphiat	6.10c to 6.25c
San Francisco	6.50c
Seattle	7.00c
St. Louis	6.00c
St. Paul	5.75c to 6.00c

BANDS

Boston	4.39c
Buffalo	4.35c
Chicago	3.95c
Cincinnati	4.25c
Cleveland	4.16c
Detroit	4.10c
Los Angeles	4.65c
New York	4.39c
Philadelphia	4.20c to 4.27c
Pittsburgh	3.95c
San Francisco	4.50c
Seattle	4.50c
St. Paul	4.20c

HOOPS

Boston	5.19c
Buffalo	4.65c
Chicago	4.55c
Cleveland	4.16c
Detroit	4.95c
New York	5.19c
Philadelphia, 1 inch and wider 20 gage and heavier	4.20c to 4.27c
Pittsburgh	3.95c
Seattle	5.50c
St. Paul	4.80c

COLD FINISHED STEEL

Boston (rounds)	4.40c
Boston (shapes)	4.90c
Buffalo (rounds)	4.45c
Buffalo (shapes)	4.95c
Chicago (rounds)	4.00c
Chicago (shapes)	4.50c
Cincinnati (rounds)	4.25c
Cincinnati (shapes)	4.75c
Cleveland (rounds)	4.10c
Cleveland (shapes)	4.60c
Detroit (rounds)	4.30c
Detroit (shapes)	4.80c
Los Angeles (rounds)	5.60c
New York (rounds)	4.40c
New York (shapes)	4.90c
Philadelphia (rounds)	4.15c to 4.35c
Philadelphia (shapes)	4.65c to 4.85c
Pittsburgh (rounds)	4.05c
Pittsburgh (sq. hex and flats)	4.55c
San Francisco (rounds)	5.50c
Seattle (rounds)	5.00c
St. Paul (rounds	4.25c

WELDED PIPE

Discounts from warehouse, New York City

Standard Steel Pipe

	Black	Galvanized
¼-⅜-inch butt	—31	+ 2
½-inch butt	—41	—24
¾-inch butt	—46	—32
1/3-inch butt	—48	—34
3½-inch lap	—44	—30
7-8-inch lap	—41	—11
9-10-inch lap	—35	— 8
11-12-inch lap	—34	— 6

Wrought Iron Pipe

	Black	Galvanized
¼-⅜-inch butt	+44	+78
½-inch butt	— 4	+19
¾-inch butt	—11	+ 9
1-1½-inch butt	—14	+ 6
2-inch lap	— 5	+14
3-6-inch lap	—11	+ 6
7-12-inch lap	— 3	+16

Bourne-Fuller Service

includes immediate shipment of all Iron and Steel materials from Cleveland and Cincinnati

Warehouses

If you are not receiving our Stock-list we shall be glad to send it to you regularly upon request.

Upson Works

Open Hearth Steel Bars for special uses. Also a complete line of Bolts and Nuts. Prompt Shipments.

THE
BOURNE-FULLER CO.
Iron, Steel
Pig Iron
Coke

CLEVELAND

New York **Chicago**
San Francisco
Cincinnati **Detroit**

ing plans prepared for 4-story, 115 x 200-foot plant at Talman and Lake streets. William Clow, 534-46 Franklin street, is president.

CHICAGO—Triangle Motors, Inc., 2229 South Michigan avenue, has been incorporated for $150,000 to manufacture automobiles, motor cars, etc., by Jay A. Colvin, K. M. Colvin and N. J. Callahan.

CHICAGO—Adolf Koban, Inc., 440 South Dearborn street, has been incorporated for $50,000 to deal in iron and steel products, metals, etc., by Max C. Liss, Elsie Koban and Adolf Koban, with Max C. Liss, 422 Ashland block, as attorney.

CHICAGO—National Garage Mfg. Co., 2217 Cottage Grove avenue, has been incorporated for $5000 to manufacture and deal in automobile garages, portable buildings, etc., by Emily F. Seymour, Lemule G. Seymour and Charles R. Goold.

CHICAGO—Princeton Pattern Works, 309 West Twenty-third street, has been incorporated for $25,000 to design, manufacture and deal in patterns, models, machines, tools, appliances, etc., by E. F. Kelly, Vincent J. Rochford and James Lancanster.

CHICAGO—Universal Locomotive Co., 80 East Jackson street, has been incorporated with 300 shares no par value stock, by Darrell S. Boyd, Roy P. Kelly and Glen A. Lloyd, to build and deal in steam boilers and furnaces, fire brick, etc.

DECATUR, ILL.—The Wagner Malleable Iron Co. is erecting 31 x 33-foot pattern shop.

HARRISBURG, ILL.—The Harrisburg Standard Electric Corp., 14 West Poplar street, has been incorporated for $20,000 to manufacture and deal in electrical supplies and equipment, by Robert E. Harris, Leonard J. Harris and Robert E. Choisser.

PLYMOUTH, ILL.—F. M. Connolly, 432 Peoples Bank building, Galesburg, Ill., is taking bids on $150,000 plant to be constructed here.

INDIANAPOLIS—The Huff-Jones Metal Products Co. has been incorporated for $100,000 to manufacture metal products and novelties, by Harry J. Huff, Randall H. Jones and Mitchell J. Vogel.

MARSHALLTOWN, IOWA—The Fisher Governor Co., manufacturer of steam specialties, is having plans prepared for constructing 2-story, 60 x 80-foot addition to plant. J. H. Fisher is president.

KANSAS CITY, KANS.—The Kansas City Can & Mfg. Co., 1019 North Fourth street, is planning constructing a 4-story can plant.

KANSAS CITY, KANS.—The H. Darby Missouri Boiler Works, 923 North Third street, plans constructing boiler plant.

CROWN POINT, MD.—Cumming Voting Machine Co., Knox, Ind., contemplates constructing brick and stone plant here.

BOSTON, MASS.—Krokyn & Browne, 7 State street, are preparing plans for a 1-story, 30 x 60-foot automobile repair shop, for L. Belramini.

FALL RIVER, MASS.—Work has started on a 1-story, 200 x 228-foot power house and a 140 x 143-foot switch house for the Mount Hope Electric Co.

SOUTH BOSTON, MASS.—The Standard Sanitary Mfg. Co. will build a 6-story, 80 x 197-foot brick and concrete storehouse.

SPRINGFIELD, MASS.—Three-Level Garage Co., plans $150,000 public garage at Harrison and Chestnut street, H. G. MacDougall, 39 Lincoln street, Boston, is interested.

STOUGHTON, MASS.—The George E. Belcher Machine Co. has been incorporated with 5000 shares no par value stock, by John M. Foster and John B. Hopkins of Beverly, Mass., and Leeds A. Wheeler of Boston.

DETROIT—The Detroit Edison Co. contemplates constructing 1-story, concrete warehouse at Fenkel and Livernois streets. A. Dow, 200 Second avenue, is president.

DETROIT—Hudson Motor Car Co. which has purchased the plant and site of the Jefferson Forge Products Co., East Jefferson avenue, plans additional manufacturing and shipping facilities for the acquired company.

DETROIT—Kelsey Wheel Co., Inc., plans 1-story, 105 x 140-foot brick, reinforced concrete and steel plant. Louis C. Brooks, 3600 Military avenue, is secretary. Smith, Hinchman & Grylls, 800 Marquette boulevard, is attorney.

DETROIT—Michigan Terminal Warehouse plans three terminal buildings and a loading shed, costing over $1,000,000. Buiidings are to be from 1 to 3 stories of brick and reinforced concrete. C. G. Hull, 930 Penobscot building, is secretary. Architect Murphy & Burns, 3456 Cass street, is taking bids.

ROYAL OAK, MICH.—Detroit Edison Co. plans 1-story warehouse here. Alex Dow, 200 Second avenue, is president.

KANSAS CITY, MO.—Forrester-Nace Box Co. plans 2-story brick and reinforced concrete warehouse here. D. B. Forrester, Eighth and Wyoming street, is president.

HARRISON, N. J.—Murray-Harris Wire Co. has been incorporated with 2500 shares no par value common and $50,000 preferred stock, to manufacture wire, by Frederick L. Carver, New York.

NEWARK, N. J.—Central Foundry Co., 51 Lockwood street, plans 1-story addition to cast iron pipe foundry.

PERTH AMBOY, N. J.—National Fireproofing Co. plans constructing machine shop.

TRENTON, N. J.—Trenton Malleable Iron Co. was damaged by fire recently with most of loss confined to gray iron department.

ALBANY, N. Y.—The Albany Garage Co., 28 Howard street, has let contracts for constructing 10-story garage on Beaver street, costing about $750,000. C. D. Hakes is treasurer.

BROOKLYN, N. Y.—Brooklyn Borough Gas Co., 2909 South Seventeenth street, plans machine shop, meter repair plant and general distributing warehouse costing about $150,000, with Block & Hess, New York, as architects.

BROOKLYN, N. Y.—Montauk Metallic Bed Co. has been incorporated with 4000 shares $100 par value preferred and 500 shares no par value common stock, by J. R. Schiff, S. Greenberg and H. D. Schroder, with Morrison & Schiff, 320 Broadway, New York, as attorney.

BUFFALO, N. Y.—General Electric Co. plans doubling its outdoor plant on River road. Transformers, etc. will be installed.

BUFFALO, N. Y.—Sterling Engine Co., 1250 Niagara street, has filed plans for brick addition to plant and offices. Company headed by C. R. Criqui, president; O. E. Foster, vice president and H. T. Vans, treasurer, manufactures marine and commercial engines.

ELMIRA, N. Y.—Crum & Holden have been incorporated with 100 shares no par value common stock to build and deal in machinery by L. G. Crum, W. J. Holden, and D. Baldwin, with Stanchfield, Collin, Lovell & Sayles, as attorney.

NEW YORK—M. P. Wilkins has been incorporated for $5000 to manufacture tools and machinery, by M. P. Wilkins, G. C. Bieber, and E. Unger, with W. R. Hill, 149 Broadway as attorney.

NEW YORK—P. & C. Supply Co. has been incorporated for $50,000 to manufacture chemicals and abrasives, by P. E. Picotte, A. M. Cusack and W. E. Sadler, with W. C. Kronmeyer, 67 Wall street, as attorney.

NEW YORK—Coke Reclamation Corp. has been incorporated to manufacture invention appliance by J. Bernhart, M. Rabinowitz and B. Feldstein, with Weschler & Kohn, 29 Broadway, as attorney.

NEW YORK—M. F. Westergren, Inc., 213 East 144th street, has awarded contracts for constructing 1-story plant, to Hubener & Escher, 748 Melrose avenue. Company manufactures sheet metal products.

NEW YORK—Fahrig Bearing Metal Co. has been incorporated for $50,000 to manufacture and deal in iron and coal, by R. A. Schailer, L. May Jr., and E. Murray, with J. A. Morrison, 41 Park Row, as attorney.

NEW YORK—Birenbaum Bros. & Sack have been incoporated for $25,000 to make chemicals and metals, by H. and S. Sack and I. Birenbaum, with H. Silverman, 299 Broadway, as attorney.

NEW YORK—Hunt's Brick & Asphalt Co., will construct 1-story, 100 x 200-foot plant at Viele avenue and Tiffany street. C. Breidenbach, 601 East Tremont avenue, is in charge.

NEW YORK—Oilheart System, has been incorporated for $5000 to build and deal in stoves, by H. B. Lehman and A. S. Plowman, with A. S. Marzo, 30 Church street, as attorney.

NEW YORK—W. Abel Harras Mfg. Co. has been incorporated with 100 shares no par value common stock to manufacture kitchen utensils, by W. Abel, P. Feiner and A. G. Sherr, with Stern & Reubens, 149 Broadway, as attorney.

NEW YORK—Allan Lock Corp. has been incorporated with 500 shares $100 par preferred stock and 500 shares no par value by A. and L. Rosenberg and J. H. Richteer, with L. Blumberg, 35 Nassau street, as attorney. Company will manufacture locks and hardware.

OLCOTT, N. Y.—A $300,000 powerhouse unit and dam are to be constructed by the Lockport & Newfane Power & Water Supply Co. Powerhouse is to be built of reinforced concrete. Frank S. Tracey, manager of the Middleport Gas & Electric Co. is interested.

QUEENS, L. I., N. Y.—Pat Automatic Corp. has been incorporated for $300,000 to build automobiles and manufacture automobile accessories, by H. D. Chapin, E. R. Baker and H. Abbenseth, with C. M. Shaffer, 15 William street, as attorney.

SYRACUSE, N. Y.—Lennox Furnace Co., Marshalltown, Iowa, manufacturer of stoves and furnaces plans constructing brick and steel plant. M. Kinnan, 2 Twelfth avenue, Marshalltown, is treasurer.

TROY, N. L.—W. & L. Trading Co., has been incorporated for $5000 to manufacture and deal in woodworking machinery, by E. D. Wales, L. C. and C. L. Laub, with T. F. Powers as attorney.

CANTON, O.—Canton Bridge Co., Beldon avenue and Tenth street, northeast, plans erection of addition. Guy C. Hiner is president and general manager.

CANTON, O.—Heineman Saw & Mfg. Co. has been incorporated for $50,000 by Fred Heineman, Catherine Heineman, George Heineman, William Elmes and Alma Elmes.

CINCINNATI—Lunkenheimer Co. has let structural contracts for erecting 309 x 411-foot addition to machine shop. J. E. Moss Iron Works, Wheeling, W. Va., will do the steel fabricating.

CINCINNATI—The Crosley Vacuum Products Co. has been incorporated for $10,000 by Lewis M. Crosley, W. A. Aiken and Powel Crosley.

DELPHOS, O.—Ward Railway Equipment Co., recently incorporated, plans bringing that company here from Lima, according to J. F. Ward, president. *Noted March 6.*

HAMILTON, O.—H. A. Nunlist, state highway division engineer at Cincinnati, has taken bids for large concrete and steel warehouse to be erected near lock 32 on the Miami and Erie canal.

ASTORIA, OREG.—Standard Oil Co. plans construction fueling and distributing plant costing approximately $100,000 on five acres of port property.

CLEARFIELD, PA.—The Hyde City Nickel Alloy Corp., Hyde City, near here, has plans for rebuilding portion of plant damaged by fire March 23.

LEBANON, PA.—The Buch Sash Weight Co. plans foundry for sash weight production and other iron castings. Dr. H. M. Vastine, is interested.

MERTZTOWN, PA.—Atlas Mineral Product Co. was damaged by fire recently with heavy loss to plant and machinery.

PHILADELPHIA—A. D. Wiler, 258-66 North Clarion street, has awarded contracts for 1-story machine shop.

PHILADELPHIA—Philadelphia & Reading railroad will require conveying equipment for pier and elevator on which construction is to start this summer. Frederick Jasperson of the Reading company, is engineer in charge.

PHILADELPHIA—Harry Epstein, 311 Reed street, manufacturer and dealer in hardware, plumber's supplies, etc., plans 2-story, 28 x 80-foot plant. J. E. Fieldstein, Otis building, is architect.

PITTSBURGH—Tank Car Gauge Co. has been incorporated for $100,000 by C. F. Ehrentraut, 5644 Broad street.

TIDIOUTE, PA.—Charles Carnahan, Charles Ulf and Harry Devereaux are organizing a company for the erection of plant to manufacture aluminum and brass products especially automotive parts. Operations are expected to begin shortly.

WILSON, PA.—Bids soon will be ask on contract for high school to be equipped with manual training facilities. Rasmussen & Wayland, 252 West Forty-sixth street, New York, are architects.

JOHNSON CITY, TENN.—The Guinn Mfg. Co. plans constructing plant here for production of automatic lighting inventions. Plants now are operating in Cincinnati.

DALLAS, TEX.—The American Machine & Foundry Co., manufacturer of sugar and cigaret making machinery, is reported as having arranged for additional working capital to expand present business. Company formerly was subsidiary of American Tobacco Co.

BLUEFIELD, W. VA.—Bluefield Parts & Bearings Co. has been incorporated for $25,000 to manufacture automotive parts and accessories, by John W. Clayton, W. W. Tender H. H. Lawson, C. A. Brown, and R. H. Hatcher.

MOUNDSVILLE, W. VA.—Glendale Lead & Zinc Co. has been incorporated for $5000 by R. C. Anderson, N. J. Anderson, Joplin, Mo.; J. H. Linkhart, D. E. Shields and L. J. Rose.

MILWAUKEE—Maynard Electric Steel Casting Co., Kilbourn road, plans additions to increase present capacity from 50 to 75 per cent. S. J. Wabiszewski is president and treasurer.

Business in Canada

COLEMAN, ALB.—J. C. Milligan, Lesson & Lineham block, is receiving bids, on closing date set, for the construction of electric power plant to cost $23,000 for the International Coal & Coke Co. here.

OXFORD, N. S.—The Oxford Foundry & Machine Co., has let the general contract to Doncaster Bros. of Amherst, N. S., for the erection of a foundry to replace that which was recently damaged by fire. The new plant will cost about $25,000.

FERGUS, ONT.—Beatty Bros., Ltd., manufacturer of washing machines, pumps, etc., is in the market for machinery and tools. W. G. Beatty is purchasing agent.

LANARK, ONT.—R. W. Sargent is in the market for a drill press and lathe.

TORONTO, ONT.—Henry Disston & Sons, 2 Fraser avenue, manufacturer of saws, machine knives, etc., will build addition to its plant here and will purchase new equipment.

TORONTO, ONT.—Canadian Scale Co., Ltd., has been incorporated to manufacture and deal in scales, weighing machines, machinery, tools, hardware supplies, etc., with $40,000 capital, by Edwin Smily, Geoffrey W. Adams and Fraser Grant.

MONTREAL, QUE.—The National Refrigerating Machine Co., is receiving prices and information and is in the market for complete equipment for new plant to be established here. M. Shulman, 83 Craig street west, is purchasing agent.

New Trade Publications

SAND MACHINES—A bulletin issued by the Newago Engineering Co., Newago, Mich., describes and illustrates a machine for disintegrating and screening sand in one operation.

SCREENS—The Link-Belt Co., Philadelphia, has published a folder describing a vibrating screen designed for screening of by-product coke, gypsum, cement, fertilizers, coals, pigments, etc. The pamphlet is illustrated with views of the machine.

WIRE PRODUCTS—A catalog issued by the Wickwire Spencer Steel Corp., New York, and the American Wire Fabrics Corp., its subsidiary, is devoted to descriptions of wire products for the hardware trade. Much valuable tabular information as to gages and mesh of woven wire is presented.

ALUMINUM FURNACES—The F. A. Coleman Co., Cleveland, presents the details of its cast iron pot aluminum furnaces in a bulletin just issued. Both the stationary and tilting types are shown, with specifications and melting data, to assist the engineer in choosing equipment.

HEAT ENDURING CASTINGS—Castings for withstanding temperatures as high as 2100 degree Fahr. are described in a booklet by the Calorizing Co., Pittsburgh. Alloys suitable for the production of such castings are described and the entire subject is discussed. The research work of the General Electric research laboratories and the engineers of the Calorizing Co. is outlined. Chapter headings include heat endurance, higher quality at lower prices, temperature range, uses, and general data.

VARIABLE DELIVERY PUMPS—A number of bulletins have been issued by the Oilgear Co., Milwaukee, describing new products embodying the principles of the variable delivery pump produced by that company. These include broaching and assembling presses, variable delivery pumps, hydraulic riveter and a bench press.

CASTINGS—The John Harper & Co., Ltd., Willenhall, England, has issued a 24-page booklet describing castings in gray iron, malleable iron and semisteel. The various kinds of castings made by this company are listed and the physical properties of mixtures used are given. The booklet is well illustrated with reproductions of photographs of many of the types of castings made.

INDUSTRIAL POWER PLANTS—In an attractive booklet of 40 pages, Lockwood, Greene & Co., engineers Boston, present to the executives of industrial plants and the engineers of power plants the principal features in the design of industrial power plants are contrasted with that of power stations . The illustrations indicate the large and varied experience of the engineers. The text is unusually well written.

WIDE SERIES BEARINGS—The Rollway Bearing Co., Inc., Syracuse, N. Y., has issued a catalog illustrating its bearings for industrial service. The wide series of bearings are supplementary to the precision bearings heretofore presented and are intended to be used in situations where the former are not required. Tables describing various assemblies guide the designer in choosing the one suited to his purpose.

HEAT RESISTING CASTINGS—Castings designed to resist high temperatures in various industrial processes are described and illustrated in a 16-page catalog by the Ohio Steel Foundry Co., Springfield, O. Data are given on a series of alloys developed for strength and resistance to oxidation and corrosion at high temperatures, each for a special industrial requirement. Castings for variou suses under high temperatures are illustrated and the general applications of the alloys are listed.

CENTRIFUGAL BLOWERS AND COMPRESSORS—Blowers and compressors of the centrifugal type and their application in water gas, coke oven and general industrial plants are described in a catalog by the DeLaval Steam Turbine Co., Trenton, N. J. The apparatus described includes single and multistage blowers and compressors for pressures up to 125 pounds per square inch. Illustrations show numerous installations in various types of plants. Considerable space is devoted to blower and compressor characteristics and testing and a theoretical and practical treatment of the compression of gases and their flow through pipes and conduits.

Iron and Steel Prices

Iron Ore

LAKE SUPERIOR ORES

Per Gross Ton Lower Lake Ports

Old range bessemer, 55 per cent iron	$5.65
Mesabi bessemer, 55 per cent iron	5.40
Old Range nonbessemer, 51½ per cent iron	4.90
Mesabi nonbessemer, 51½ per cent iron	4.75

EASTERN LOCAL ORES

Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic 53 to 63 per cent	9.00 to 10.50
Copper free low phosphorus 53 to 65 per cent	12.50 to 14.50

FOREIGN IRON ORE

Cents per unit, c.i.f. Atlantic ports

Spanish low phosphorus, 52 to 54 per cent	9.00 to 9.50
Algerian low phosphorus, 52 to 54 per cent	10.00 to 10.50
Swedish and Norwegian low phosphorus, 68 per cent	11.00 to 11.50
Swedish foundry or basic, 66 to 68 per cent	9.00 to 10.00
Spanish foundry or basic, 50 to 54 per cent	8.00 to 9.00
Alegerian foundry and basic, 50 to 54 per cent	8.00 to 9.00

Manganese Ore

Prices do not include duty at rate 1 per cent per pound of metallic manganese contained.

Brazilian, minimum 47 per cent.....nominal 44 to 46 cents c.i.f. tidewater

Indian, minimum 47 per cent.....nominal 44 to 46 cents c.i.f. tidewater

Caucasian, 53 to 55 per cent.....Ordinary, 43 cents c.i.f. tidewater

.....Washed, 46 cents c.i.f. tidewater

Fluor Spar

85 and 5 per cent grade

Washed gravel, Kentucky and Illinois mines, per net ton	$19.50 to 20.00
Washed gravel, imported duty paid eastern tidewater, per gross ton	20.60 to 21.10

Rivets

Structural rivets, C. L. Pitts.	2.65c to 2.70c
Structural rivets L. C. L. Pittsburgh	2.70c to 2.75c

Rivets, 7/16-in. and smaller.....70 and 10 off

Nuts and Bolts

(Up to 1¼ and 1⅛ inches inclusive)

Hot pressed square or hexagon blank.....$4.25 off list

Hot pressed square or hexagon tapped.....$4.25 off list

Cold punched square or hexagon blank.....$4.00 off list

Cold punched square or hexagon.....$4.00 off list

Cold punched semifinished hexagon nuts ⅝-inch and larger.....75 and 5 off

Cold punched semifinished hexagon nuts 9/16-inch and smaller.....80 and 5 off

Price f.o.b. Pittsburgh, packages of 50.

CARRIAGE BOLTS

(¾ x 6 inches, smaller and shorter)

Rolled thread.....60 and 5 off

Cut thread.....50, 10 and 5 off

Larger and longer.....50, 10 and 5 off

MACHINE BOLTS

(⅜ x 4 inches, hot pressed nuts)

Rolled thread.....60, 10 and 5 off

Cut thread.....60 and 5 off

Larger and longer.....60-10-10 off

(⅜ x 4 inches cold punched nuts)

Cut thread.....50, 5 off

Larger and longer.....50, 5 off

Lag screws.....65 and 5 off

Plow bolts Nos. 1, 2 and 3 heads.....50 and 10 off

4 to 10 heads.....50-10 + 20 off

Flat and round head stove bolts.....75, 10 and 5 off

Other stove bolts.....75 and 5 off

Tap bolts.....25 and 10 off

Bolt ends with hot pressed nuts.....60 and 5 off

Bolt ends with cold punched nuts.....50 and 5 off

Blank bolts.....60 and 10 off

Rough stud bolts with nuts.....45 and 5 off

Washers

Wrought washers.....$5.25 to $5.50 off

Steel Pipe

(Effective April 19, 1923)

Pittsburgh basing discounts, jobbers' carloads.

	Black	Galvanized
Butt Weld		
⅛-inch	45	19½
¼ and ⅜-inch	51	25½
½-inch	56	42½
¾-inch	60	48½
1 to 3-inch	62	50½
Lap Weld		
2-inch	55	43½
2½ to 6-inch	59	47½
7 to 8-inch	56	43½
9 and 10-inch	54	41½
11 and 12-inch	53	40½
REAMED AND DRIFTED		
Butt Weld		
1 to 3-inch	60	48½
Lap Weld		
2-inch	53	41½
2½ to 6-inch	57	45½
EXTRA STRONG—PLAIN ENDS		
Butt Weld		
⅛-inch	41	24½
¼ and ⅜-inch	47	30½
½-inch	53	42½
¾-inch	58	47½
1 to 1½-inch	60	49½
2 to 3-inch	61	50½
Lap Weld		
2-inch	53	42½
2½ to 4-inch	57	46½
4½ to 6-inch	56	45½
7 to 8-inch	52	39½
9 and 10-inch	49	32½
11 and 12-inch	44	31½
DOUBLE EXTRA STRONG		
Butt Weld		
½-inch	42	32½
¾ to 1¼-inch	45	35½
2 to 2½-inch	47	37½
Lap Weld		
2-inch	41	32½
2½ to 4-inch	43	34½
4½ to 6-inch	42	33½
7 to 8-inch	38	25½

Wrought Iron Pipe

(Effective Jan. 23, 1923)

Pittsburgh basing discounts, jobbers' carloads

THREADS AND COUPLINGS		
Butt Weld		
¼ and ⅜-inch	+11	+39
½-inch	22	2
¾-inch	28	11
1 to 1½-inch	30	13
Lap Weld		
1¼ and 1½-inch	Upon application	
2-inch	23	7
2½ to 6-inch	26	11
7 to 8-inch	28	13
7 to 12-inch	26	11
PLUGGED AND REAMED		
Two points less than above		
EXTRA STRONG, PLAIN ENDS		
Butt Weld		
¼ and ⅜-inch	+19	+54
½-inch	21	7
¾-inch	28	12
1 to 1½-inch	30	14
Lap Weld		
2-inch	23	9
2½ to 4-inch	29	15
4½ to 6-inch	28	14
7 to 8-inch	21	7
9 to 12-inch	16	2
DOUBLE EXTRA STRONG		
Butt Weld		
½-inch	+47½	+50½
¾-inch	+28	+40
1-inch	+34	+46
1¼-inch	+28	+40
1½-inch	+27	+39
Lap Weld		
2 and 2½ inches	+13	+25
3 to 4-inch	+ 8	+17
4½ to 6-inch	+ 9	+18
8-inch	+12	

Boiler Tubes

L. C. L. discounts. C. L. 4 points larger

STEEL (Lap Welded)

(Effective April 19, 1923)

2 and 2¼-inch	23 off
2½ and 2¾-inch	33 off
3-inch	36 off
3¼ to 3¾-inch	38½ off
4 to 13-inch	42 off

CHARCOAL IRON

(Effective April 12, 1923)

1½-inch	+22
1¾-inch	+12
2 and 2¼-inch	+ 2
2½ to 3-inch	3
3¼ to 4½-inch	5

SEAMLESS COLD DRAWN

(Effective April 19, 1923)

1-inch	51 off
1¼ and 1½-inch	43 off
1¾-inch	27 off
2 and 2¼-inch	18 off
2½ and 2¾-inch	28 off
3 and 3¼-inch	32 off
3½ and 3¾-inch	33 off
4-inch	37 off
4½ and 5-inch	29 off

SEAMLESS HOT ROLLED

3 and 3¼-inch	34 off
3½ and 3¾-inch	35 off
4-inch	39 off

SEAMLESS STEEL MERCHANT BOILER TUBES

Extras:

Add $8 per net ton for more than four gages heavier than standard and add 10 per cent to theoretical weight.

Add 5 per cent for lengths over 24 feet and not over 26 feet.

Smaller tubes than 1-inch and lighter than standard gage to be sold at mechanical tubing list and discount.

Intermediate sizes and gages not listed above take price of next larger outside diameter and heavier gage.

SEAMLESS STEEL MECHANICAL TUBING

Base Discounts

Carbon, 0.10 to 0.20 per cent	83 off
Carbon, 0.30 to 0.40 per cent	81 off
Carbon 0.40 to 0.50 per cent	net price

Plus differentials and extras for cutting.

SEAMLESS STEEL LOCOMOTIVE AND SUPERHEATER TUBES

(Effective April 19, 1923)

Outside diameter	Net prices per foot f.o.b. Pittsburgh Gage	Price
2-inch	12-gage	15c
2-inch	12-gage	15c
2-inch	11-gage	16c
2-inch	10-gage	17c
2¼-inch	12-gage	17c
2¼-inch	11-gage	18c
2¼-inch	10-gage	20c
3-inch	7-gage	35c
1½-inch	9-gage	15c
5⅜-inch	9-gage	55c
5½-inch	9-gage	57c

Plus usual extras for forming and for long lengths.

Hot Rolled Alloy Steels

Prices per pound, Pittsburgh

S. A. E. Series—	
2300 (3½ per cent nickel)	5.00c
3100 (nickel chromium)	4.00c
6100 (chrome vanadium)	4.75
6100 (chrome vanadium spring)	4.50c
9250 (Silico manganese spring)	4.00c to 4.25c

A roller used in the caterpillar track of a gasoline powered paver. Cast in Sivyer Hi-Carbon Electric Steel.

Defeating Abrasive Wear with a Sivyer Hi-Carbon Casting

THIS casting is subjected to extreme abrasive and pounding wear, as a roller, in the caterpillar track of a power paver. Yet, it must be light, for it forms part of the unsprung weight of the track. Sivyer Hi-Carbon Steel gives this thin section piece the strength to resist the abusing wear it receives—with no sacrifice of lightness.

Send Blue Prints

The physical properties of Sivyer Hi-Carbon Electric Steel Castings when they leave the Sivyer foundry, are as follows:

Tensile strength	80,000 lbs.
Yield Point	45,000 lbs.
Elongation in 2"	18%
Reduction in Area	22%

These properties can be increased after machining by a heat treatment consisting of heating, quenching and drawing.

The complicated thin section roller, shown above, has proven satisfactory, because:

Sivyer Hi-Carbon Steel successfully meets the requirements for strength and resistance to wear.

The development of special molding methods, involving the use of dry sand cores, eliminates the cracks and strains of cooling shrinkage.

The high temperature and the free flowing metal of the Sivyer electric furnaces, makes possible the successful pouring of thin and varying sections.

Perhaps, we can solve similar castings problems for you. Send blue prints of the part with a statement of your difficulties. We will be glad to study the problems involved and to recommend possible solutions without obligation on your part.

SIVYER STEEL

SIVYER STEEL CASTING COMPANY, MILWAUKEE

Iron and Steel Production

Compiled By IRON TRADE REVIEW

Pig Iron

	-Stacks- No.	In	—Output— Total	Av. daily
1907				
January	376	311	2,174,801	70,155
February	374	308	2,047,036	73,109
March	377	304	2,186,709	70,539
April	378	327	2,226,708	74,223
May	391	329	2,291,030	73,904
June	392	341	2,237,420	74,580
July	396	335	2,253,243	72,685
August	397	329	2,243,656	72,376
September	399	329	2,174,148	72,471
October	401	314	2,359,690	76,119
November	398	226	1,820,558	60,685
December	398	154	1,234,733	39,830
Total			25,249,732	
1908				
January	398	139	1,081,813	34,897
February	401	150	1,086,809	37,476
March	398	154	1,229,856	39,672
April	398	146	1,155,122	38,504
May	396	145	1,168,002	37,677
June	395	154	1,106,300	36,876
July	397	166	1,228,604	39,632
August	399	181	1,366,019	44,065
September	399	189	1,416,252	47,208
October	400	200	1,573,824	50,764
November	402	212	1,582,314	52,744
December	403	221	1,723,664	55,602
Total			15,718,579	
1909				
January	406	234	1,787,473	57,683
February	407	233	1,682,470	60,088
March	406	229	1,822,024	58,793
April	406	224	1,731,406	57,687
May	407	236	1,866,757	60,218
June	408	240	1,929,929	64,334
July	409	258	2,088,620	67,375
August	412	278	2,232,642	72,021
September	413	297	2,378,655	79,201
October	413	309	2,589,681	83,538
November	414	311	2,532,740	84,425
December	416	314	2,682,702	86,539
Total			25,325,099	
1910				
January	416	311	2,599,995	83,871
February	417	311	2,429,525	86,768
March	417	310	2,588,736	83,508
April	418	291	2,477,700	82,590
May	419	279	2,374,802	76,607
June	420	271	2,288,279	76,276
July	420	254	2,158,124	69,617
August	422	244	2,103,791	67,864
September	420	234	2,048,461	68,282
October	421	230	2,086,205	67,297
November	421	218	1,910,385	63,679
December	421	193	1,779,899	57,416
Total			26,845,902	
1911				
January	421	210	1,766,658	56,985
February	421	226	1,781,285	63,617
March	421	236	2,165,764	69,863
April	421	220	2,044,904	68,163
May	421	206	1,871,888	60,367
June	421	202	1,773,282	59,109
July	423	196	1,776,108	57,294
August	423	206	1,921,832	61,995
September	423	216	1,973,918	65,797
October	421	214	2,092,061	67,486
November	421	214	1,999,100	66,637
December	422	215	2,032,301	65,558
Total			23,198,601	
1912				
January	421	227	2,052,806	66,220
February	422	235	2,098,796	72,372
March	420	237	2,411,529	77,791
April	421	239	2,377,621	79,254
May	423	243	2,503,341	80,753
June	424	242	2,433,737	81,125
July	422	245	2,402,567	77,502
August	423	255	2,500,163	80,650
September	419	262	2,444,454	81,482
October	422	280	2,683,645	86,569
November	423	289	2,639,562	87,985
December	423	291	2,777,292	89,590
Total			29,325,513	
1913				
January	423	297	2,787,800	89,929
February	423	306	2,578,670	92,095
March	423	278	2,762,823	89,123
April	421	297	2,754,353	91,812
May	421	285	2,816,825	90,865
June	422	283	2,616,883	87,229
July	422	264	2,558,275	82,525
August	424	260	2,537,018	81,839
September	425	258	2,494,098	83,137
October	425	244	2,539,924	81,933
November	424	225	2,229,960	74,322
December	424	191	1,976,138	63,746
Total			30,652,767	
1914				
January	423	199	1,879,336	60,624
February	423	219	1,888,607	67,450
March	423	232	2,341,551	75,534
April	422	212	2,261,501	75,383
May	422	198	2,097,019	67,646
June	422	193	1,904,566	63,486
July	422	187	1,955,324	63,075
August	422	187	1,996,483	64,403
September	422	180	1,882,718	62,757
October	422	162	1,767,227	57,007
November	421	150	1,501,269	50,042
December	421	154	1,495,325	48,236
Total			22,970,926	
1915				
January	421	165	1,591,024	51,323
February	421	179	1,666,592	59,521
March	421	190	2,046,280	66,009
April	421	197	2,114,518	70,484
May	421	207	2,255,157	72,747
June	421	221	2,369,932	78,998
July	421	234	2,563,311	82,687
August	421	246	2,774,825	89,510
September	420	266	2,834,342	94,478
October	420	276	8,120,340	100,656
November	421	285	3,035,235	101,174
December	421	295	3,201,605	103,278
Total			29,573,161	
1916				
January	421	304	3,171,878	102,319
February	421	312	3,078,548	106,157
March	422	315	3,327,630	107,343
April	422	320	3,225,496	107,517
May	423	321	3,364,584	108,535
June	423	325	3,213,818	107,127
July	419	316	3,221,127	103,907
August	419	317	3,197,838	103,156
September	419	326	3,208,041	106,935
October	419	328	3,508,180	113,167
November	420	322	3,317,805	110,593
December	422	309	3,184,178	102,715
Total			39,019,123	
1917				
January	422	310	3,159,839	101,930
February	422	317	2,649,935	94,641
March	423	331	3,255,813	105,026
April	425	333	3,328,061	110,936
May	425	340	3,413,677	110,119
June	427	347	3,260,234	108,675
July	429	351	3,337,442	107,659
August	431	357	3,238,970	104,483
September	431	342	3,140,742	104,691
October	433	354	3,296,286	106,332
November	434	344	3,198,597	106,620
December	435	321	2,885,380	93,077
Total			38,164,976	
1918				
January	435	294	2,403,227	77,523
February	435	319	2,318,242	82,723
March	438	338	3,209,996	103,548
April	437	351	3,273,355	109,112
May	437	360	3,451,884	111,351
June	437	353	3,316,148	110,538
July	437	364	3,408,584	109,954
August	439	371	3,378,479	108,983
September	438	364	3,413,223	113,774
October	437	364	3,482,392	112,335
November	437	360	3,347,844	111,595
December	435	351	3,434,114	110,778
Total			38,437,488	
1919				
January	435	330	3,306,279	106,654
February	435	311	2,943,347	105,120
March	435	279	3,088,023	99,614
April	435	216	2,474,374	82,479
May	433	197	2,107,729	67,991
June	433	199	2,114,028	70,467
July	434	240	2,424,212	78,200
August	432	266	2,742,081	88,453
September	433	163	2,480,790	82,692
October	432	216	1,864,424	60,142
November	432	252	2,407,369	80,244
December	432	262	2,626,074	84,711
Total			30,578,730	
1920				
January	432	285	3,012,373	97,172
February	432	305	2,984,257	102,904
March	433	315	3,375,768	108,895
April	433	278	2,752,670	91,754
May	433	297	2,991,825	96,510
June	433	302	3,046,623	101,553
July	434	291	3,043,918	98,190
August	434	306	3,145,536	101,468
September	434	317	3,124,308	104,143
October	435	290	3,288,341	106,075
November	435	255	2,935,081	97,836
December	435	202	2,700,268	87,105
Total			36,400,968	
1921				
January	436	184	2,414,753	77,895
February	436	155	1,929,394	68,906
March	436	103	1,594,866	51,447
April	436	96	1,190,751	39,691
May	436	90	1,215,272	39,202
June	436	74	1,064,007	35,466
July	435	69	864,642	27,892
August	436	69	954,901	30,802
September	435	84	985,795	32,859
October	435	95	1,234,450	39,821
November	429	120	1,414,958	47,165
December	429	123	1,642,775	52,992
Total			16,506,564	
1922				
January	430	127	1,645,804	53,090
February	429	139	1,630,180	58,220
March	429	155	2,035,908	65,674
April	429	161	2,070,161	69,005
May	427	175	2,309,348	74,495
June	427	191	2,362,455	78,748
July	427	170	2,403,030	77,517
August	427	143	1,810,665	58,408
September	427	189	2,024,008	67,466
October	428	218	2,629,655	84,827
November	428	241	2,846,110	94,870
December	428	253	3,083,520	99,468
Total			26,850,844	
1923				
January	428	261	3,228,226	104,136
February	424	278	2,993,918	106,925
March	424	295	3,523,595	113,664
April	423	311	3,547,012	118,233
May	423	322	3,868,486	124,790
June	424	322	3,667,868	122,262
July	418	299	3,684,677	118,860
August	418	270	3,448,886	111,254
September	418	254	3,117,526	103,917
October	418	245	3,142,642	101,375
November	418	229	2,891,191	96,373
December	418	231	2,912,527	93,952
Total			40,025,850	
1924				
January	414	248	3,015,480	97,273
February	414	263	3,072,165	105,937
March	410	269	3,463,252	111,718

Ingots and Castings

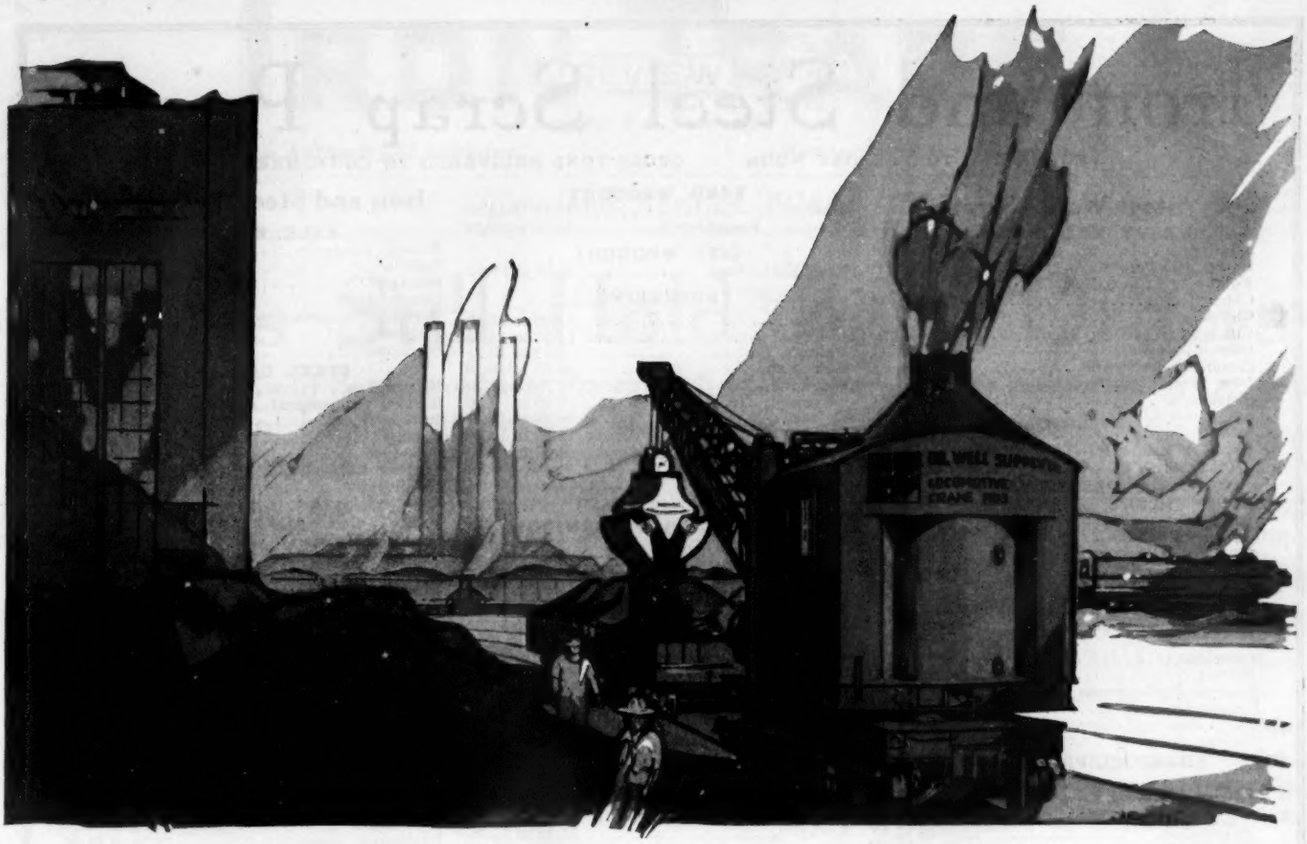
By American Iron and Steel Institute

	Ingots	Castings	Total
1918	43,051,022	1,411,410	44,462,432
1919	33,694,795	976,437	34,671,232
1920	40,881,392	1,251,542	42,132,934
1921	19,184,084	559,713	19,743,797
1922	34,568,418	1,034,508	35,602,926

Monthly Ingot Output

Gross Tons

1923	95.35 per cent of capacity	Calculated total
January	3,644,629	3,822,369
February	3,294,264	3,454,918
March	3,858,675	4,046,854
April	3,760,997	3,944,412
May	4,000,695	4,195,800
June	3,574,567	3,748,890
July	3,350,829	3,514,241
August	3,506,755	3,677,771
September	3,161,964	3,316,166
October	3,382,986	3,547,966
November	2,969,012	3,113,804
December	2,711,529	2,843,764
Total	41,216,902	43,226,955
1924	95.35 per cent	
January	3,432,541	3,599,938
February	3,604,862	3,780,663
March	3,953,048	4,145,829



Great Utility Makes This Crane Highly Economical

The wide variety of jobs that the Brownhoist locomotive crane can do —*and do well*—has made it practically indispensable to scores of industrial plants. Because of its great utility—and because it can be kept continually at work—it is exceedingly economical and profitable equipment for any concern that contends with heavy handling problems.

An excellent example of the adaptability of this Brownhoist crane is furnished by The Oil Well Supply Co. of Oil City, Pa. They write:

"We are using it for unloading pig iron, scrap and sand; for grading by means of the clamshell bucket; for collecting steel scraps from the machine shop by means of the magnet; and eventually loading them from a storage bin into out-going cars. It is being used on construction jobs. Also, recently it was used to remove a railroad trestle.

"The saving of time and money by this machine is large."

If you have a handling problem of any type, the advice of Brownhoist engineers is yours for the asking.

The Brown Hoisting Machinery Co., *Cleveland, O.*

Brownhoist Products: Heavy Dock Machinery, Locomotive Cranes, Bunkers, Conveyors, Bridge Cranes, Buckets, Etc.
Branch Offices: New York, Chicago, Pittsburgh, San Francisco, New Orleans, London, Eng.

BROWNHOIST

MATERIAL HANDLING MACHINERY

Iron and Steel Scrap Prices

CORRECTED TO TUESDAY NOON GROSS TONS DELIVERED TO CONSUMER

Steel Works Scrap

HEAVY MELTING STEEL

Birmingham	14.00 to 14.50
Boston (dealers)	10.50 to 11.00
Buffalo	16.50 to 17.00
Chicago	14.50 to 15.00
Cleveland	14.50 to 15.00
Cincinnati	12.50 to 13.00
Detroit (dealers)	12.50 to 13.00
Eastern Pennsylvania	15.00 to 16.00
New York (dealers)	11.00 to 11.50
Pittsburgh	16.00 to 16.50
St. Louis	14.50 to 15.00
Valleys	16.50 to 16.75
No. 1 railroad steel New York (dealers)	12.00 to 12.50

COMPRESSED SHEETS

Buffalo	15.00 to 15.50
Chicago	12.50 to 13.00
Cleveland	11.75 to 12.00
Detroit (dealers)	11.00 to 11.50
Pittsburgh	14.00 to 14.50
Valley	14.75 to 15.00

BUNDLED SHEETS

Buffalo	10.00 to 11.00
Cincinnati	9.00 to 9.50
Cleveland	10.50 to 11.00
Detroit	9.50 to 10.00
Eastern Pennsylvania	13.00 to 13.50
Pittsburgh	13.00 to 13.50
St. Louis	8.50 to 9.00
Valleys	12.75 to 13.00

SHEET CLIPPINGS, LOOSE

Chicago	9.00 to 9.50
Detroit	8.50 to 9.00

STEEL RAILS, SHORT

Birmingham	12.00 to 12.50
Boston (dealers)	**12.00 to 12.50**
Chicago	19.00 to 19.50
Cincinnati	16.00 to 16.50
Cleveland (over 6 ft)	13.75 to 14.00
St. Louis	18.50 to 19.00

STOVE PLATE

Birmingham	15.50 to 16.00
Boston (consumers)	15.50 to 16.00
Buffalo	16.00 to 16.50
Chicago	18.00 to 18.50
Cincinnati (net tons)	9.50 to 10.00
Cleveland	13.75 to 14.00
Detroit (net ton) dealers	13.00 to 13.50
Eastern Pennsylvania	15.00 to 15.50
New York (dealers)	11.25 to 11.75
Pittsburgh	13.00 to 13.50
St. Louis	17.00 to 17.50

LOW PHOSPHORUS

Buffalo	20.00 to 21.00
Cincinnati	14.00 to 14.50
Eastern Pennsylvania	20.00 to 21.00
Pitts. billet and bloom crops	20.00 to 20.50

SHOVELING STEEL

Chicago	14.25 to 14.75
Pittsburgh	13.00 to 13.50
St. Louis	14.00 to 14.50

KNUCKLES, COUPLERS, SPRINGS

Chicago	18.00 to 18.50
Eastern Pennsylvania	19.50 to 20.50
Pittsburgh	18.50 to 19.00
St. Louis	18.50 to 19.00

FROGS, SWITCHES, GUARDS

Chicago	14.50 to 15.00
Eastern Pennsylvania	15.00 to 16.00
St. Louis	15.50 to 16.00

BOILER PLATE, CUT

St. Louis	8.50 to 9.00

ANGLE BARS—STEEL

Chicago	17.00 to 17.50
St. Louis	17.00 to 17.50

Iron Mill Scrap

RAILROAD WROUGHT

Birmingham	12.00 to 13.00
Boston (dealers)	**13.50 to 14.00**
Buffalo	14.50 to 15.00
Cleveland, No. 1	11.00 to 11.50
Chicago, No. 1	15.00 to 15.25
Chicago, No. 2	14.50 to 15.00
Cincinnati, No. 1	10.50 to 11.00
Detroit, No. 2	12.50 ot 13.00
Eastern Pennsylvania	18.00 to 19.00
New York, No. 1 (dealers)	14.50 to 15.00
Pittsburgh, No. 1	13.00 to 13.50
Pittsburgh, No. 2	16.00 to 16.50
St. Louis, No. 1	14.50 to 15.00
St. Louis, No. 2	14.00 to 14.50

WROUGHT PIPE

Boston (dealers)	10.00 to 10.50
Buffalo	11.00 to 12.00
Eastern Pennsylvania	14.50 to 15.00
New York (dealers)	10.00 to 10.50

YARD WROUGHT

Boston	12.00 to 12.50
Eastern Pennsylvania	16.00 to 17.00

CITY WROUGHT

New York, long	14.00 to 14.50

BUSHELING

Buffalo	15.00 to 15.50
Chicago, No. 1	13.00 to 13.50
Chicago, No. 2	9.75 to 10.25
Cincinnati, No. 1	10.00 to 10.50
Cleveland, No. 1	10.75 to 11.00
Cleveland, No. 2	9.00 to 9.50
Detroit, No. 1	10.50 to 11.00
Detroit, No. 2 (new)	10.50 to 11.00
Detroit, No. 2 (old)	9.00 to 9.50
Eastern Pennsylvania	15.00to 16.00
Pittsburgh, No. 1	13.50 to 14.00
St. Louis, No. 1	13.50 to 14.00

MACHINE SHOP TURNINGS

Birmingham	7.00 to 8.00
Boston (dealers)	9.00 to 9.50
Buffalo	11.50 to 12.00
Chicago	8.25 to 8.75
Cincinnati	8.50 to 9.00
Cleveland	10.75 to 11.00
Detroit (dealers)	8.50 to 9.00
Eastern Pennsylvania	13.50 to 14.00
New York (dealers)	9.25 to 9.75
Pittsburgh	12.75 to 13.25
St. Louis	8.50 to 9.00
Valleys	11.00 to 11.25

CAST IRON BORINGS

Birmingham (chemical	16.00 to 16.50
Birmingham (plain)	8.00 to 9.00
Boston (chemical	11.50 to 12.00
Boston (dealers)	9.00 to 9.50
Buffalo	12.50 to 13.00
Chicago	11.00 to 11.50
Cincinnati	9.50 to 10.00
Cleveland	10.75 to 11.50
Detroit (dealers)	9.50 to 10.00
Eastern Pennsylvania (chem.)	16.00 to 17.00
Eastern Pennsylvania	14.50 to 15.00
New York (dealers)	10.25 to 10.75
Pittsburgh	13.00 to 13.50
St. Louis	11.50 to 12.00
Valleys	13.00 to 13.25

MIXED BORINGS AND TURNINGS
For blast furnace use

Boston (dealers)	9.00 to 9.50
Cleveland	10.75 to 11.00
Detroit (dealers)	9.00 to 9.50
Eastern Pennsylvania	13.00 to 13.50
New York (dealers)	10.25 to 10.75

IRON AXLES

Birmingham	21.00 to 21.50
Boston (consumers)	**31.00 to 32.00**
Buffalo	25.00
Chicago	29.50 to 30.00
Cincinnati	19.50 to 20.00
Easetrn Pennsylvania	24.00 to 26.00
New York (dealers)	25.75 to 26.25
St. Louis	28.00 to 28.50

IRON RAILS

Buffalo	19.00 to 20.00
Chicago	19.00 to 19.50
Cincinnati	11.50 to 12.00
St. Louis	15.00 to 15.50

PIPES AND FLUES

Chicago	10.00 to 10.50
Cincinnati	9.00 to 9.50
Cleveland	9.00 to 9.25
St. Louis	9.00 to 9.50

RAILROAD GRATE BARS

Buffalo	16.00 to 16.50
Chicago	16.50 to 17.00
Cleveland	14.75 to 15.00
Eastern Pennsylvania	15.50 to 16.00
New York (dealers)	13.50 to 14.00
St. Louis	17.00 to 17.50

FORGE FLASHINGS

Boston (dealers)	9.00 to 9.50
Chicago	12.00 to 12.50
Cleveland (under 10 in.)	10.50 to 10.75
Cleveland (over 10 in.)	9.75 to 10.00
Detroit (dealers)	9.00 to 9.50

FORGE SCRAP

Boston (dealers)	9.50 to 10.00
Chicago	18.50 to 19.00
Eastern Pennsylvania	14.25 to 14.75

ARCH BARS AND TRANSOMS

Chicago	20.00 to 20.50
St. Louis	20.00 to 20.50

ANGLE BARS—IRON

Chicago	19.50 to 20.00
St. Louis	20.50 to 21.00

Iron and Steel Works Scrap

AXLE TURNINGS

Boston (dealers)	10.00 to 10.50
Buffalo	14.50 to 15.00
Chicago	13.00 to 13.50
Cleveland	12.25 to 12.50
Eastern Pennsylvania	14.50 to 15.00
Pittsburgh	16.00 to 16.50
St. Louis	13.00 to 13.50

STEEL CAR AXLES

Birmingham	**19.00 to 20.00**
Boston (consumers)	**20.00 to 21.00**
Buffalo	19.00 to 20.00
Chicago	19.50 to 20.00
Cleveland	18.50 to 19.00
Eastern Pennsylvania	21.00 to 22.00
Pittsburgh	18.50 to 19.00
St. Louis	20.00 to 20.50

SHAFTING

Boston (consumers)	**21.00 to 22.00**
Ghicago	20.50 to 21.00
Eastern Pennsylvania	20.00 to 21.00
New York (dealers)	17.50 to 18.00
St. Louis	21.00 to 21.50

Iron Foundry Scrap

CAR WHEELS

Birmingham, tram car	16.50 to 17.00
Birmingham, iron	**16.00 to 17.00**
Boston (consumers)6	**20.00 to 20.50**
Buffalo	18.00 to 18.50
Chicago ,iron	17.00 to 17.50
Cincinnati	11.50 to 12.00
Eastern Pennsylvania	18.00 to 18.50
New York iron (dealers)	14.75 to 15.25
Pittsburgh, iron	17.00 to 17.50
Pittsburgh, steel	18.50 to 19.00
St. Louis, iron	17.50 to 18.00

NO. 1 CAST SCRAP

Birmingham, cupola	**20.00 to 21.00**
Boston (consumers)	21.50 to 22.00
Buffalo	19.00 to 19.50
Chicago, cupola	20.00 to 20.50
Cincinnati No. 1 machinery cupola (net tons)	16.50 to 17.00
Cleveland, cupola	20.00 to 20.50
Detroit (net tons) (dealers)	16.00 to 16.50
Eastern Pennsylvania. cupola	18.00 to 19.00
New York, cupola (dealers)	15.50 to 16.00
Pittsburgh, cupola	17.50 to 18.00
San Francisco	25.00 to 26.00
St. Louis, railroad	20.50 to 21.00
St. Louis, agricultural	20.00 to 20.50
Valleys	19.50 to 20.00

HEAVY CAST

Boston (consumers	18.00 to 18.50
Buffalo (breakable)	15.00 to 15.50
Cleveland	12.00 to 12.50
Detroit (automobile) (net ton)	22.00 to 22.50
Eastern Pennsylvania	15.50 to 16.00
New York (dealers)	14.50 to 15.00
Pittsburgh	16.00 to 16.50

MALLEABLE

Boston (railroad	18.00 to 19.00
Buffalo	19.00 to 19.50
Chicago, railroad	20.00 to 21.00
Chicago, agricultural	19.00 to 20.00
Cincinnati, agricultural	11.50 to 12.00
Cincinnati, railroad	16.00 to 16.50
Cleveland, agricultural	16.75 to 17.00
Cleveland, railroad	18.00 to 18.50
Detroit (dealers)	**18.00 to 18.50**
Eastern Pennsylvania, railroad	16.50 to 17.50
Pittsburgh, railroad	16.50 to 17.00
St. Louis, agricultural	16.00 to 16.50
St. Louis, railroad	17.25 to 17.75

Miscellaneous Scrap

RAILS FOR ROLLING
5 feet and over

Birmingham, tram car	16.50 to 17.00
Boston (dealers)	14.00 to 14.50
Chicago	17.25 to 17.75
Cleveland	16.00 to 16.25
Detroit	13.00 to 13.50
Eastern Pennsylvania	18.00 to 19.00
New York (dealers)	15.50 to 16.00
Pittsburgh district	18.50 to 19.00
St. Louis	16.75 to 17.25

LOCOMOTIVE TIRES

Chicago	17.00 to 17.50
St. Louis	15.75 to 16.25

LOW PHOSPHORUS PUNCHINGS

Chicago	17.00 to 17.50
Eastern Pennsylvania	20.00 to 21.00
Pittsburgh	18.50 to 19.00